

**READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLING OR CONNECTING ELECTRICAL OR AIR TO THE POSITIONER. POSITIONER SHOULD BE INSTALLED AND SERVICED BY A QUALIFIED TECHNICIAN.**

### INTRODUCTION

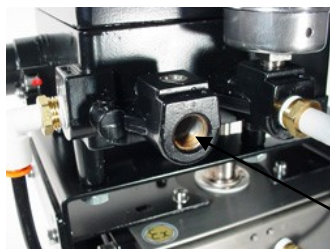
This document provides installation, operation and maintenance instructions for Valworx 5299EP series electro-pneumatic valve positioners. These positioners are rated IP66 weatherproof and designed for non-hazardous applications.

### DESCRIPTION

Valworx 5299 electro-pneumatic valve positioners convert a 4-20mA input control signal to a proportional pneumatic output. This output is fed to a 90 degree rotary type air actuator, which in turn, controls the valve position. Valworx positioners offer fast and accurate control of ball valves, butterfly valves and other type valves. These positioners direct mount to air actuators with the standard VDI / VDE-3845 Namur type top shaft mounting. Universal NAMUR mounting bracket kit is included with each positioner.

### AIR SUPPLY CONNECTION

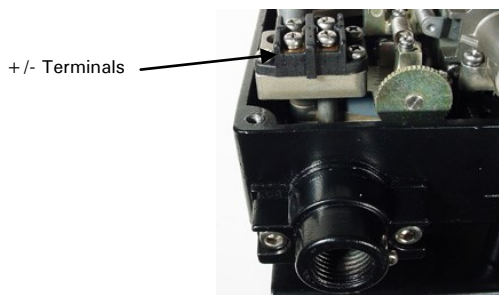
Connect a 20-100 PSI compressed air supply to the 1/4" NPT inlet port marked 'SUP'. Supply pressure is determined by actuator size. Most Valworx air actuated valve assemblies require 80-100 PSI. The compressed air should be instrument quality; filtered, dry and oil-free. Typically, an air filter-regulator is used to maintain a constant inlet pressure. Gauge ports are 1/8" NPT.



Inlet Port 'SUP'  
1/4 NPT

### ELECTRICAL WIRING

Connect a 4-20mA analog control signal to the (+) and (-) screw terminals located under the positioner cover (impedance 250 ohms). Both internal and external grounding screw terminals are available. Electrical conduit connection is 1/2 NPT female. The variable control signal will position the actuator (valve) anywhere between closed and open. The actuator (valve) will be CLOSED with a 4mA signal and OPEN with a 20mA signal.



+/- Terminals

1/2 NPT Female  
Electrical Connection



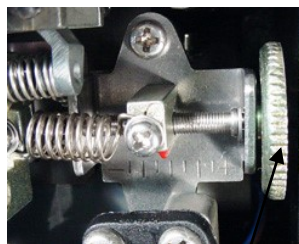
**WARNING** - To prevent injury, keep hands away from all moving parts. Remove air and electrical when servicing unit.



### ZERO AND SPAN ADJUSTMENT

The Zero adjustment is factory set for most valves, NO ADJUSTMENT required in most applications. To zero or set valve starting position, supply a 4mA input signal and turn zero adjuster until starting point is reached.

The Span adjustment is factory set for most valves, NO ADJUSTMENT required in most applications. To set the span or end point of rotation, supply a 20mA input signal and turn the span adjuster as required. Re-adjust zero if necessary.



Zero Adjustment  
Knob



Span Adjustment      Locking Screw

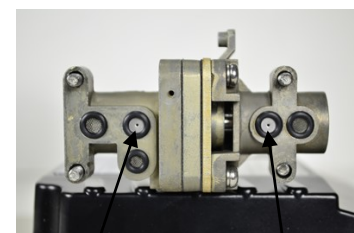
### PILOT VALVE OUTPUT ORIFICE

Positioners are shipped with standard 0.7mm orifice plates, NO ADJUSTMENT required in most applications. On new applications, if hunting or an unstable condition occurs, changing orifice 1 and orifice 2 as follows may solve the problem.

Actuator Air Volume	Output Orifice (mm)
Below 45 cm <sup>3</sup>	Ø 0.5
45 ~ 90 cm <sup>3</sup>	Ø 0.7
90 ~ 180 cm <sup>3</sup>	Ø 1.0
Over 180 cm <sup>3</sup>	none



Pilot Valve



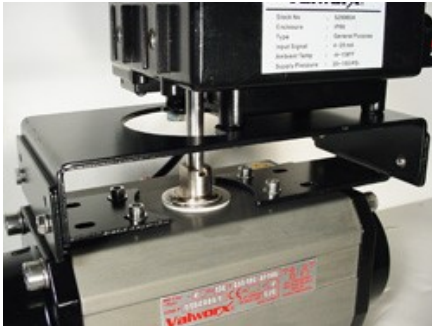
Orifice 1

Orifice 2

## Positioner Mounting and Plumbing

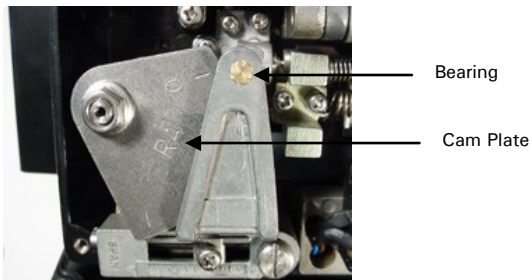
### MOUNTING POSITIONER TO ACTUATOR

Install the universal mounting bracket (included) to the positioner and air actuator as shown below. The bracket fits Valworx actuators utilizing the standard VDI/VDE-3845 NAMUR mounting interface as well as many other brands. Mounting bracket works with standard NAMUR 80x30mm or 130x30mm mounting holes and 20 or 30mm shaft heights. The positioner output spaded shaft mounts directly to the actuator slotted shaft, no linkages or adapters required.



### CAM SETUP

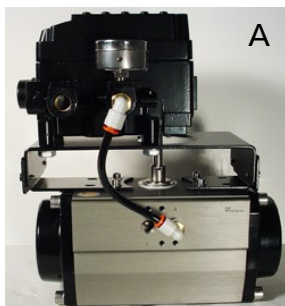
The cam plate is factory set for 'RA' reverse acting, NO ADJUSTMENT required in most applications. In the 'RA' mode the output shaft will rotate counter-clockwise (when viewed from top of positioner). The positioner rotation can be reversed by switching cam to 'DA' direct acting mode. In the 'DA' mode the output shaft will rotate clockwise. To change rotation, disconnect the air supply and remove the positioner cover. Remove the cam retainer nut and flip the cam plate over to 'DA' mode. The cam zero reference line should be facing the bearing. Reinstall the cam retainer nut and tighten securely.



### SETUP OPTION 1

#### PLUMBING 'RA' FUNCTION AND 'SR' ACTUATORS

Positioner setup as reverse acting (RA) and used with a spring return (SR) quarter turn rotary air actuator. Positioner output shaft rotates counter-clockwise when viewed from top of positioner. Connect 1/4" or 6mm tubing as follows: Connect positioner port marked 'OUT 1' to port 'A' on Valworx air actuator as shown below in Pic A. Actuator ports may be reversed on other brand actuators. Plug positioner port marked 'OUT 2'. Do not plug actuator port 'B', an exhaust muffler can be installed to keep out dirt.

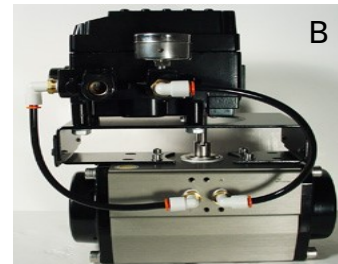


### SETUP OPTION 2

#### PLUMBING 'RA' FUNCTION AND 'DA' ACTUATORS

Positioner setup as reverse acting (RA) and used with a double acting (DA) quarter turn rotary air actuator. Positioner output shaft rotates counter-clockwise when viewed from top of positioner

Connect positioner port marked 'OUT 1' to port 'A' on Valworx air actuator. Connect port 'OUT 2' to port 'B' as shown below in Pic B. Actuator ports may be reversed on other brand actuators.

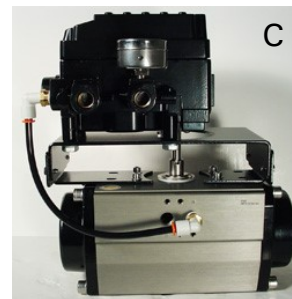


### SETUP OPTION 3

#### PLUMBING 'DA' FUNCTION AND 'SR' ACTUATORS

Positioner setup as direct acting (DA) and used with a spring return (SR) quarter turn rotary air actuator. Positioner output shaft rotates clockwise when viewed from top of positioner

Connect positioner port marked 'OUT 2' to port 'A' on Valworx air actuator as shown below in Pic C. Actuator ports may be reversed on other brand actuators. Plug positioner port marked 'OUT 1'. Do not plug actuator port 'B', an exhaust muffler can be installed to keep out dirt.



### SETUP OPTION 4

#### PLUMBING 'DA' FUNCTION AND 'DA' ACTUATORS

Positioner setup as direct acting (DA) and used with a double acting (DA) quarter turn rotary air actuator. Positioner output shaft rotates clockwise when viewed from top of positioner

Connect positioner port marked 'OUT 1' to port 'A' on Valworx air actuator. Connect port 'OUT 2' to port 'B' as shown below in Pic D. Actuator ports may be reversed on other brand actuators.

