



**TYPE 650**  
**Positive Bias Air Relay**

**INTRODUCTION**

The ControlAir Type 650 positive bias air relay is designed for air service only. Maximum supply pressure is 250 psig (17 bar). Maximum signal pressure is 150 psig (10 bar). Maximum output pressure is 150 psig (10 bar). Ambient temperature limit is -40°F to 160°F (-40°C to 71°C).

**SPECIFICATIONS**

<b>Flow Capacity</b>	50 SCFM (1,500 NI/min) at 100 psig (7 bar) supply with 20 psig (1.4 bar)
<b>Exhaust Capacity</b>	15 SCFM (425 NI/min). Downstream 5 psig (0.34 bar) above set pressure
<b>Sensitivity</b>	1/4" (3.2mm) water column
<b>Effect of Supply Pressure Change</b>	0.1 psi for a 50 psig change
<b>Supply Pressure</b>	250 psig (17.24 bar) maximum
<b>Signal Pressure</b>	150 psig (10.34 bar) maximum
<b>Output Pressure</b>	150 psig (10.34 bar) maximum
<b>Ambient Temperature Limits</b>	40° to 160°F (-40° to 71°C)
<b>Weight</b>	1.75 lbs (635 gm)
<b>Mounting</b>	Pipe, panel or bracket
<b>Materials:</b> <b>Body:</b> <b>Internal Components:</b> <b>Diaphragm:</b> <b>Knob:</b>	Diecast aluminum Stainless steel, brass, plated steel, acetal Nitrile elastomer and polyester fabric ABS plastic

**INSTALLATION**

Prior to installation clean all air lines to remove dirt and other debris. Apply a small amount of compound to the male threads only and install the relay so that the flow is in accordance with the IN and OUT ports as marked. The signal port is tapped into the relay through the 1/4" NPT connection on the side of the unit. Make sure that all connections are tight and that the exhaust vent on the side of the relay is not blocked shut. The Type 650 can be mounted in any position without effecting operation.

The use of a filter to remove dirt and liquid in the air line ahead of the relay is recommended for consistent performance. If an air line lubricator is used, it should be located downstream of the Type 650.

**OPERATION**

Apply an input signal to the signal port. If a positive bias is required, turn the knob clockwise until desired downstream pressure is achieved. For decreased positive bias, turn the knob counter clockwise.

**MAINTENANCE**

Occasional attention may be required due to the accumulation of foreign material in the instrument. The regulator is easily disassembled without removal from the line. Before this is done, however, shut off valve upstream of the volume booster to prevent escape of air when disassembled. Remove the two No. 8-32 screws on the bottom of the unit and pull out the pintle assembly. Wash inner valve assembly with solvent, exercising care to avoid damaging diaphragms and valve facings. Avoid such solvents as acetone, carbon tet, trichlorethlene. Replace assembly carefully.

If further attention is required, repair kits and replacement parts may be purchased.

The vent hole in the spacer should be kept clean. A slight flow of air through this hole is necessary for the proper operation of the relay.

Repair kit: 449-871-021

**LIMITED WARRANTY & DISCLAIMER**

ControlAir LLC products are warranted to be free from defects in materials and workmanship for a period of eighteen months from the date of manufacture, provided said products are used according to ControlAir LLC recommended usages. ControlAir LLC's liability is limited to repair of, refund of purchase price paid for, or replacement in kind of, at ControlAir LLC's sole option, any products proved defective. ControlAir LLC reserves the right to discontinue manufacture of any product or change product materials, design or specifications without notice. Note: ControlAir does not assume responsibility for the selection, use, or maintenance of any product. Responsibility for the proper selection, use, and maintenance of any ControlAir product remains solely with the purchaser and end user.

**WARNING: These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under Specifications. Before using these products with fluids other than air, for non-industrial applications, life-support systems, or other applications not within published specifications, consult ControlAir LLC.**