

# numatics®

## Precision Regulators



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### 1. Economy Miniature Electro-Pneumatic Transducer – R84 Series

- I/P and E/P Versions
- Magnet Coil Technology

### 2. High Flow Precision Regulator – R88 Series

- R880 High Flow Regulator
- R881 Back Pressure Precision Regulator

### 3. Ratio Relay Volume Booster – R87 Series

- Precision Air Pilot Regulator
- 1:1 and 1:6 Ratios Available

### 4. Instrument Air Regulator – R89 Series

- Precision Regulator
- Integral 5 Micron Filter – Manual Drain

### 5. Electro-Pneumatic Transducer – R83 Series

- I/P and E/P Versions
- Magnet Coil Technology

### 6. Precision Regulator – R80 Series

- R800 Standard Series
- R820 High Relief Series

### 7. Miniature Electro-Pneumatic Transducer – R85 Series

- I/P and E/P Versions
- Piezo Electric Technology

**R84 Series**

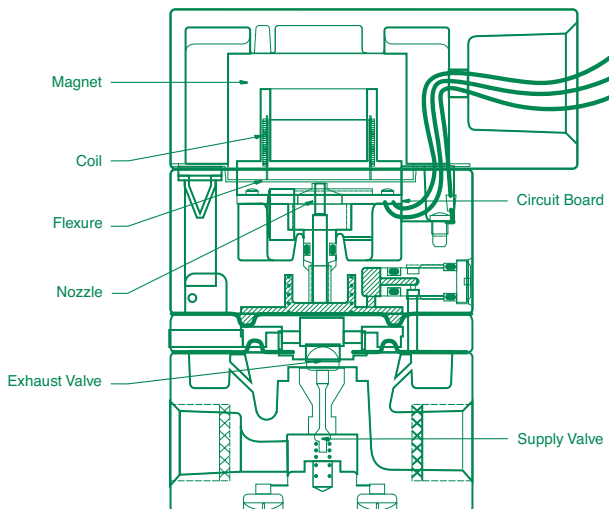
**Application**

The R84 Series I/P, E/P transducers are compact electronic pressure regulators that convert an electrical signal (current or voltage) to a proportional pneumatic output. Its compact design and flexible porting make it an ideal choice for space-constrained DIN rail or manifold applications. A NEMA-4X housing with RFI/EMI protection will allow it to be used in demanding industrial environments.

The operating principle of the R84 is based on a rugged, field-tested force-balance design. A coil is suspended in a magnetic field by a flexure. Varying the electrical signal through the coil positions the flexure to a nozzle. This creates a back pressure that acts as a pilot to an integral volume booster. This provides a high flow which increases control speed in critical applications.

**Features**

- Compact size
- NEMA-4X housing
- Low air consumption
- High flow capacity
- Accessible external orifice
- Input and output ports on both front and back
- RFI/EMI protection
- External zero and span adjustments
- Field reversible
- Wall, panel, pipe or DIN rail mounting
- No separate power supply required
- CE Approved



**Specifications**

	<b>Economy Miniature Electropneumatic Transducer R84 Series</b>
Linearity (independent)	> +/- 0.5% of span
Hysteresis and repeatability	>0.5% of span
Port sizes	Pneumatic = 1/4 Electric = 1/2 NPT
Media	Clean, dry, oil-free, air filtered to 0.3 micron
Mounting	Wall, panel (included), 2" pipe (included) or DIN rail (optional)
Materials	Housing: Chromate treated aluminum with baked paint Elastomers: Buna-N Trim: Stainless Steel, brass, zinc plated steel
Weight	1.3 lbs (.59 KG)
Inputs	4-20 mA, 0-5V DC, 0-10 V DC
Outputs	3-15 psig, 3-27 psig, 2-60 psig, 3-120 psig
Air Consumption	1.8 SCFH (0.05 m3/hr) at mid Range typical
Supply pressure: Note: Supply pressure must be a minimum of 5 psig (0.3 bar) above the maximum output pressure	Outputs up to 30 psi: 100 psig (7 bar) maximum Outputs to 120 psig: 150 psig (10 bar) maximum
Flow Capacity at mid range	4.5 SCFM (7.6 m3/hr) at 25 psig (1.7 Bar) supply 12 SCFM (20 m3/hr) at 100 psig (7 Bar) supply
Relief Capacity	2 SCFM (3.4 m3/hr) at 5 psig (35kPa) above set point
Temperature Range	-20° F to +150° F (-30° C to +65° C)

**Notes:**

Electrical Connections – For both I/P and E/P models, the 1/2" conduit electrical connections are made to the red (+) and black (-) leads. The green lead is used for case ground. For both I/P and E/P models, the 43650 DIN electrical connections are made to terminal 1 (+) and terminal 2 (-). Terminal 3 is not used. Ground is for case ground.



**Precision Regulators**

<b>Precision Regulator Repair Kits</b>	
<b>Kit #</b>	<b>Description</b>
RKR800D	for 2-40 pressure range models
RKR800E	for 2-60 pressure range models
RKR800F	for 2-120 pressure range models
RKR820F	for 2-120 pressure range models

<b>Replacement Adjustment Knob Kits</b>	
<b>Kit #</b>	<b>Description</b>
RP8002	for R800 and R820 models

**Electropneumatic Transducers**

<b>Electropneumatic Transducer Repair Kits</b>	
<b>Kit #</b>	<b>Description</b>
RKR831BC	for 3-15 and 3-27 pressure range models
RKR831EF	for 2-60 and 3-120 pressure range models

**High Flow Precision Regulators**

<b>Regulator Repair Kits</b>	
<b>Kit #</b>	<b>Description</b>
RKR880A	for 0-2 pressure range models
RKR880B	for 0-15 pressure range models
RKR880C	for 0-30 pressure range models
RKR880E	for 1-60 pressure range models
RKR880F	for 2-150 pressure range models
RKR881	for back pressure regulator

<b>Replacement Adjustment Knob Kits</b>	
<b>Kit #</b>	<b>Description</b>
RP81	for R880 models

**Mounting Brackets**

<b>High Flow Precision Regulator</b>	
<b>Kit #</b>	<b>Description</b>
PK80	80 & 82 Series Bracket
PK88	87 & 82 Series Bracket
PK89	89 Series Bracket

**Instrument Air Regulators**

<b>Instrument Air Regulator Repair Kits</b>	
<b>Kit #</b>	<b>Description</b>
RKR89	for all models

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