

# Type 550X

## Miniature I/P, E/P Transducer

*Accurate and economical electronic pressure control*

The Type 550X is an electronic pressure regulator that converts a variable signal (current or voltage) to a proportional pneumatic output. Its compact housing, accessible ports and easy adjustments provide an ideal answer to applications that are space-constrained. This economical instrument provides precision air pressure regulation to actuators, valves, positioners and other final control elements. An integral volume booster provides high flow capacity, increasing control speed in critical applications.

### Features

- **Compact Size**  
Great for high density mounting
- **Easy Wiring**  
Conduit, terminal block or DIN 43650 connections
- **Multiple Mounting Options**  
Wall, panel, DIN rail, pipe or manifold mounted
- **Input/Output Ports on Front and Back**  
Provides flexible pneumatic connections
- **External Zero and Span Adjustments**  
Convenient field calibration
- **Intrinsic Safety Approvals**  
Standard feature for 4-20mA units:
  - ☞ Factory Mutual (FM),
  - ☞ Canadian Standards Assoc. (CSA)Optional feature for 4-20mA units:
  - ☞ ATEX



**ControlAir Inc.**

# Type 550X

## Compact Housing, Versatile Mounting

Multiple choices for wiring and porting in the Type 550X simplify installation and decrease the time required to do so. In addition to standard wall, panel or pipe mounting, an optional DIN rail kit is available. Also available is the ControlAir Type 925 Multifunction Manifold, which provides a common air supply and individual shutoff valves for sets of 3, 5, 10 or 15 units.

### Principles of Operation

The Type 550X I/P, E/P Transducer is a force balance device in which a coil is suspended in a magnetic field by a flexure. Current flowing through the coil generates movement of the flexure. As this assembly moves towards the nozzle, it creates backpressure, which acts as a pilot to an integral booster relay. Input signal increases (or decreases for reverse acting) cause an accurate proportional change in output.

Zero and Span are calibrated by turning adjust screws on the front face of the unit. Adjustment of the zero screw repositions the nozzle relative to the flexure. The span adjustment is a potentiometer that controls the amount of current through the coil.

The zero-based version of the Type 550X incorporates an integral negative bias booster relay. The negative bias allows the unit to provide zero output while the booster section amplifies the pressure to provide outputs up to 120 psig.

### The Type 550X Advantage

- **Compact Size** – small footprint permits space saving dense mounting.
- **Input and Output Ports on Both Front and Back** – allows versatile plumbing.
- **Superior Value** – economical startup cost, low air consumption, and reliable performance make the Type 550X a great investment.
- **Choice of Conduit, DIN 43650 or Terminal Block Electrical Connection** – makes wiring convenient.
- **Modular Construction** – multiple mounting configurations provide installation versatility.
- **NEMA 4X / IP65 Housing** – good for indoor or outdoor use. (Conduit connection “A” only)
- **High Flow Capacity** – delivers quick actuation of dampers, louvers, valves and cylinders.
- **Other Features** – Reverse Acting Operation\*, RFI/EMI Protection, External Zero and Span Adjustments, Accessible Orifice.

\* Contact factory for details.

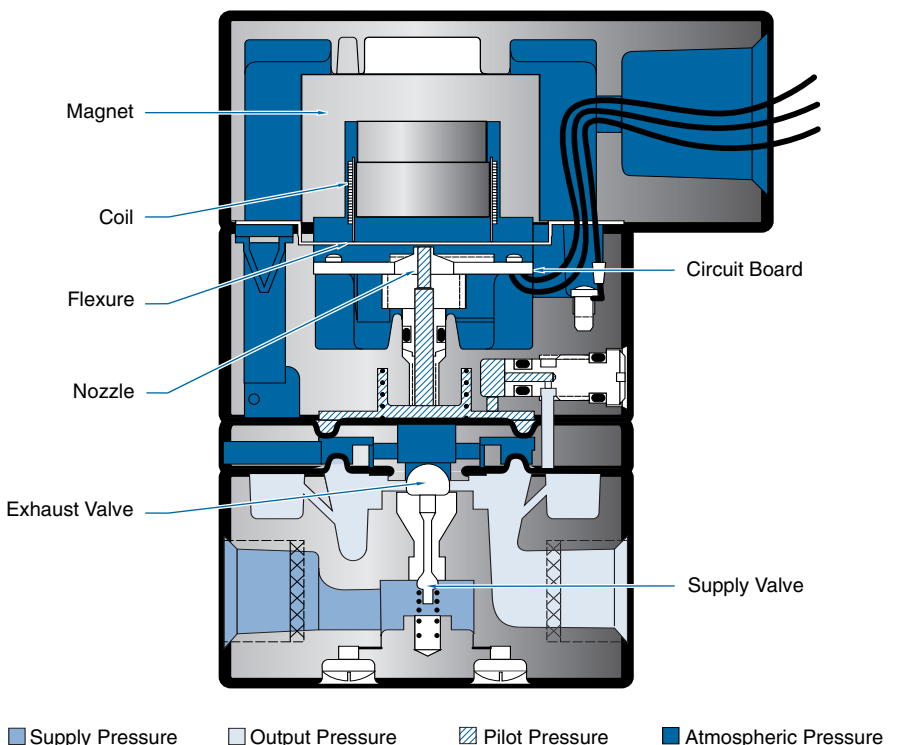


Diagram of the Type 550X shown actual size



## Functional Specifications

	STANDARD RANGE			ZERO-BASED RANGE		
<b>Inputs</b>	4-20 mA	0-5 VDC 1-5 VDC	0-10 VDC 1-9 VDC	4-20 mA	0-5 VDC 1-5 VDC	0-10 VDC 1-9 VDC
<b>Outputs</b>	3-15 psig 3-27 psig 6-30 psig 2-60 psig 3-120 psig* *can be spanned up to 145 psig	0.20-1.00 BAR 0.20-1.80 BAR 0.40-2.00 BAR 0.14-4.00 BAR 0.20-8.00 BAR		0-30 psig 0-60 psig 0-120 psig	0.00-2.00 BAR 0.00-4.00 BAR 0.00-8.00 BAR	
<b>Air Consumption</b>	1.8 scfh (0.05 m3/hr) at mid range typical			6.0 scfh at mid range typical		
<b>Supply Pressure</b> Note: Supply pressure must be a minimum of 5 psig (0.3 BAR) above maximum output	100 psig (6.90 BAR) max. (3-15, 3-27, 6-30, 1-17 psig) 150 psig (10.00 BAR) max. (2-60, 3-120 psig)			100 psig (6.90 BAR) max. (0-30, 0-60 psig) 150 psig (10.00 BAR) max. (0-120 psig)		
<b>Flow Capacity</b>	4.5 scfm (7.7 m3/hr) at 25 psig (1.70 BAR) supply (3-15, 3-27, 6-30, 1-17 psig) 12.0 scfm (20.0 m3/hr) at 100 psig (6.90 BAR) supply (3-15, 3-27, 6-30, 1-17, 2-60 psig) 20.0 scfm (34.0 m3/hr) at 150 psig (10.00 BAR) supply (3-120 psig)			12.0 scfm (20.0 m3/hr) at 100 psig (6.90 BAR) supply (0-30, 0-60 psig) 20.0 scfm (34.0 m3/hr) at 150 psig (10.00 BAR) supply (0-120 psig)		
<b>Temperature Limits</b>	-20° to +150° F (-30° to +65° C)			-20° to +150° F (-30° to +65° C)		
<b>Impedance</b>	4-20 mA	3-15 psig 3-27 psig 6-30 psig 2-60 psig 3-120 psig	180 Ohms 240 Ohms 240 Ohms 245 Ohms 280 Ohms	4-20 mA	0-30 psig 0-60 psig 0-120 psig	290 Ohms 300 Ohms 315 Ohms
	0-5 VDC	3-15 psig 3-27 psig 6-30 psig 2-60 psig 3-120 psig	615 Ohms 550 Ohms 550 Ohms 520 Ohms 500 Ohms	0-5 VDC	0-30 psig 0-60 psig 0-120 psig	450 Ohms 480 Ohms 495 Ohms
	0-10 VDC	3-15 psig 3-27 psig 6-30 psig 2-60 psig 3-120 psig	1230 Ohms 1100 Ohms 1100 Ohms 1040 Ohms 1000 Ohms	0-10 VDC	0-30 psig 0-60 psig 0-120 psig	900 Ohms 960 Ohms 990 Ohms
	1-5 VDC	3-15 psig 3-27 psig 6-30 psig 2-60 psig 3-120 psig	495 Ohms 440 Ohms 440 Ohms 495 Ohms 475 Ohms	1-5 VDC	0-30 psig 0-60 psig 0-120 psig	410 Ohms 460 Ohms 455 Ohms
	1-9 VDC	3-15 psig 3-27 psig 6-30 psig 2-60 psig 3-120 psig	985 Ohms 880 Ohms 880 Ohms 900 Ohms 880 Ohms	1-9 VDC	0-30 psig 0-60 psig 0-120 psig	830 Ohms 800 Ohms 785 Ohms

## Performance Specifications

<b>Linearity (Independent)</b>	<±0.5% of span	<±1.5% of span
<b>Hysteresis, and Repeatability</b>	<0.5% of span	<1.0% of span
<b>Supply Pressure Sensitivity</b>	<0.1% of span per 1.0 psig (0.07 BAR)	<0.02% of span per 1.0 psig (0.07 BAR)

### RFI/EMI Effect

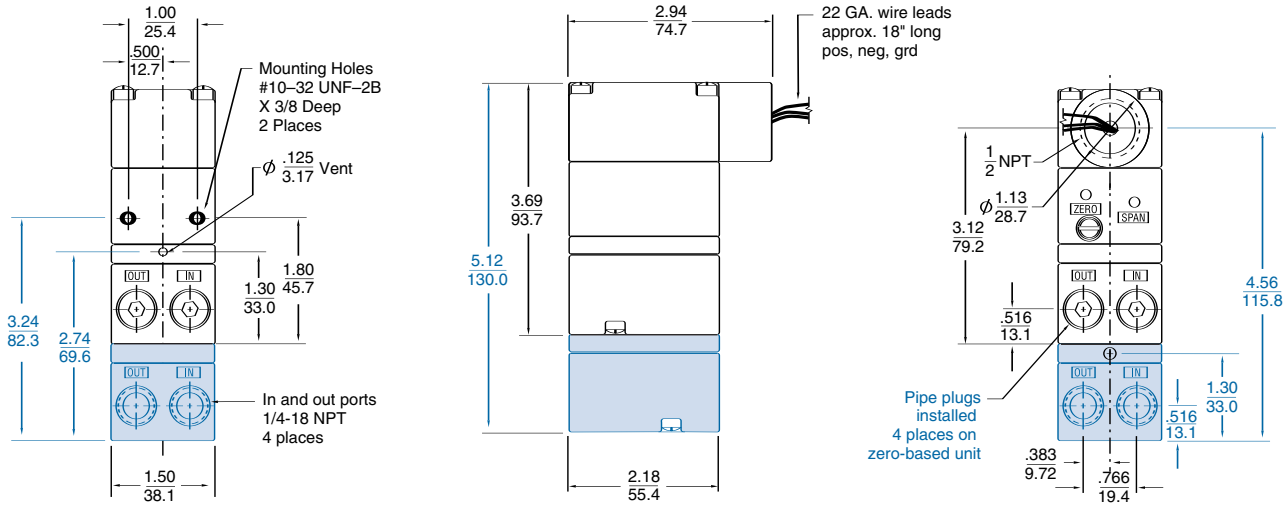
Less than .5% of span change in output pressure per En 61000-4-3:1998, Amendment 1, Performance Criterion A

# Type 550X

## Dimensional Drawings

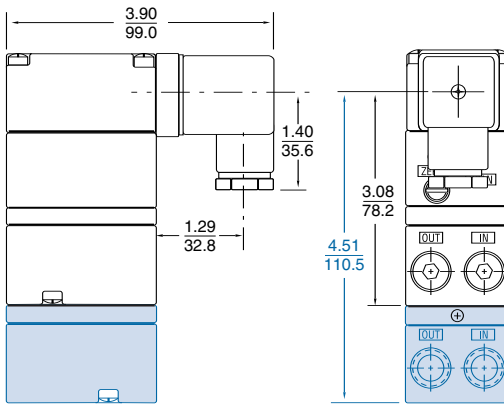
Blue areas and dimensions apply to the zero-based units only

### 1/2 inch Conduit Connection (A)



### DIN 43650 Connector (D)

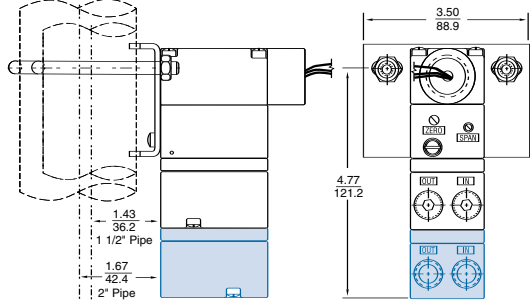
Blue areas and dimensions apply to the zero-based units only



## Mounting Options

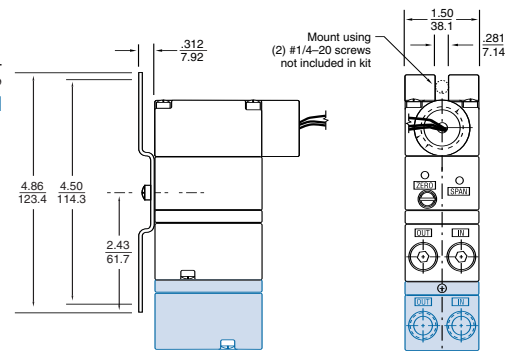
### Pipe Mounting Kit # 448-542-005

Blue areas and dimensions apply to the zero-based units only



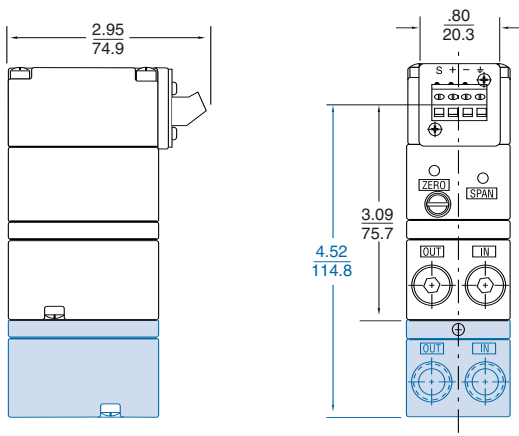
### Panel Mounting

Blue areas and dimensions apply to the zero-based units only



### Terminal Block (T)

Blue areas and dimensions apply to the zero-based units only

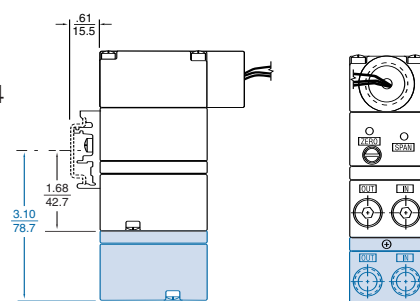


### DIN Rail Mounting

Kit # 445-766-024

DIN Rail suitable for EN-50035, EN-50045 and EN-50022 Rails

Blue areas and dimensions apply to the zero-based units only



# Type 925

# Multifunction Supply Manifold

*A common supply port with individual shut off valves*

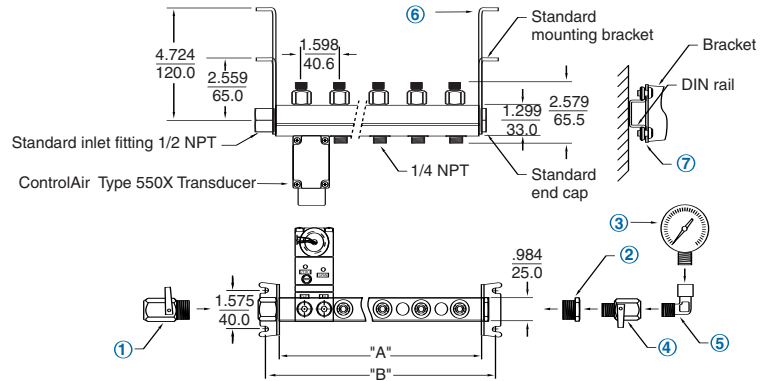


The Type 925 Multifunction Manifold provides a common air supply line to multiple units of our Type 550X and Type 900X I/P, E/P transducers.

Manifolds are available to hold 3, 5, 10 or 15 units. Each port features a patented individual shut-off valve that allows safe on-line service or modification with supply pressure on. Individual units may be installed or removed without effecting other units on the manifold. Construction of the manifold is simple and flexible. Connection ports thread easily into the I/P, E/P units.

No additional hardware such as check valves or adapter kits are required. The Type 925 is DIN rail mountable (optional). The Type 925 can also be used as a common output manifold for solenoid valves.

## Dimensional Drawings



## Ordering Information

Stations	Length "A" in. (mm)	Length "B" in. (mm)
3	6.1 (155)	7.13 (181)
5	9.3 (236)	10.31 (262)
10	17.3 (439)	18.31 (465)
15	25.3 (642)	26.30 (668)

Type 925 Manifolds	Part Number
3 Unit Manifold Kit	438-544-005
5 Unit Manifold Kit	438-544-006
10 Unit Manifold Kit	438-544-007
15 Unit Manifold Kit	438-544-008

Each kit includes manifold, mounting brackets (2), end cap, 1/2" NPT inlet fitting

Diagram #	Accessories	Part Number
1	1/2" Supply Shut-off Valve	445-778-008
2	1/2" to 1/4" NPT Reducer	445-722-005
3	Pressure Gauge (1/4" bottom mount, 0-60 psig)	446-725-014
3	Pressure Gauge (1/4" bottom mount, 0-160 psig)	446-725-015
4	1/4" Shut-off Valve	445-778-009
5	1/4" Elbow	445-722-004
6	Extended Mounting Bracket Kit (Includes both brackets)	448-544-009
7	DIN Rail Mounting Kit	448-542-004



# Type 550X

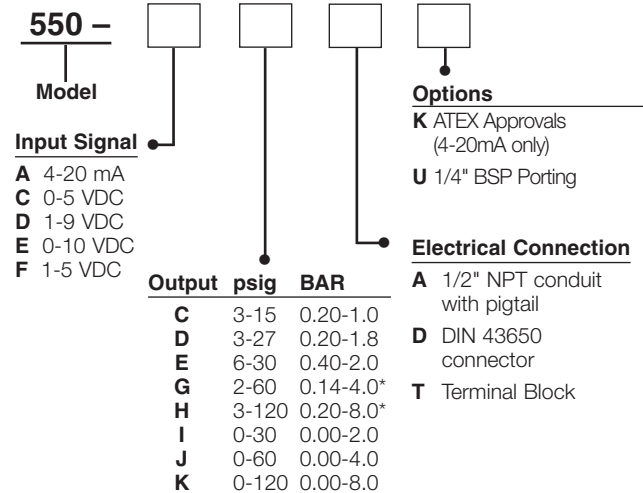
# Physical Specifications

# Type 550X

# Ordering Information

<b>Port Sizes</b>	Pneumatic	1/4" NPT
<b>Media</b>	Clean, dry, oil-free, instrument air, filtered to 40 micron	
<b>Electrical Connections</b>	Conduit 1/2" NPT, Terminal Block, DIN 43650	
<b>Mounting</b>	Direct wall, panel, 1 1/2" pipe, DIN rail or Manifold	
<b>Materials</b>	Housing	Chromate-treated aluminum with epoxy paint.
	Elastomers	Buna-N
	Trim	Stainless steel; brass; zinc-plated steel
<b>Weight</b>	Standard Unit: 1.3 lbs Zero-based Unit: 1.7 lbs	
<b>Enclosure</b>	NEMA 4X/IP65 (Conduit Connection "A" only)	

### Use this coding system to order



\* Output shown is calibrated at the factory. Large span adjustment capability allows recalibration to achieve output ranges from 3-35 psig (0.2-2.4 BAR) with 2-60 psig unit, to 3-145 psig (0.2-10.0 BAR) with 3-120 psig unit.

### Accessories

DIN rail mounting kit  
Kit # 445-766-024

1.5" or 2" pipe mounting kit  
Kit # 448-542-005

### Classification

### EC Declaration of Conformity

We, ControlAir, Inc.  
8 Columbia Drive  
Amherst, NH 03031

Declare that the Type 550X Transducer family to which this declaration applies, comply with these standards:

- EN 50082-1:1998
- EN 55011:1999
- EN 61010-1:1993 including AMD2:1995

Following the provisions of EMC directive 89/336/EEC

## Hazardous Area Classifications

### Factory Mutual (FM) & Canadian Standards (CSA) Approvals

Standard feature for 4-20mA units

#### Intrinsically Safe (1/2" NPT Conduit)

Class I, II, III, Division 1,  
Groups C, D, E, F, & G  
Enclosure Nema 4X(IP 65)  
Temp. Code T4 Ta = 70° C  
Rated 4-20 mA, 30 VDC Max.

#### Non-Incendive (Conduit, DIN, Terminal)

Class I, Division 2,  
Groups A, B, C & D  
Temp. Code T4 Ta = 70° C

#### Suitable for (Conduit only)

Class II & III, Division 2,  
Groups F & G  
Temp. Code T6 Ta = 70° C

#### Intrinsically Safe (DIN & Terminal)

Class I, Division 2, Groups C & D  
Temp. Code T4 Ta = 70° C  
Rated 4-20 mA, 30 VDC Max.

#### Entity Parameters

U: (Vmax) = 30 VDC Ci = 0 uF  
I: (Imax) = 125 mA Li = 0 mH  
Pi = .7 w Max.

#### ATEX Approvals (option K)

II 1 G EEx ia IIB T4  
Tamb = -30° C to +70° C

#### Entity Parameters

U: (Vmax) = 30 VDC Ci = 0 uF  
I: (Imax) = 125 mA Li = 0 mH  
Pi = .7 W Max.

