

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
- **RoHS**
All versions of the T550X comply with the RoHS directive
- **Intrinsic Safety Approvals**
 - Ⓢ Factory Mutual (FM)
(4-20mA units only)
 - Ⓢ Canadian Standards Assoc. (CSA)
 - Ⓢ ATEX option available



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.

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.

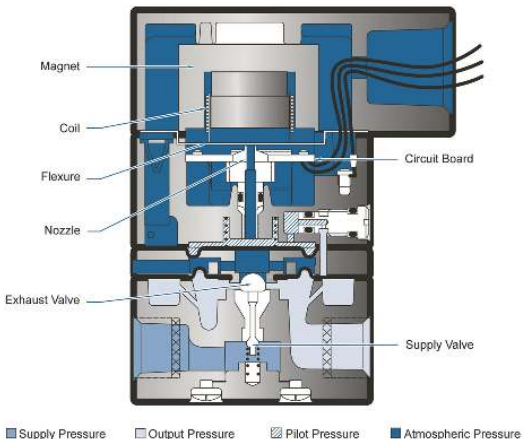


Diagram of the Type 550X shown actual size



Functional Specifications

	Standard Range			High Output Range		Zero-Based Range		
Inputs	4-20 mA, 0-5 VDC, 0-10 VDC, 1-5 VDC, 1-9 VDC							
Outputs psig (BAR)	3-15 (0.2-1.0)	5-27 (0.2-1.8)	6-30 (0.4-2.0)	2-60 (0.14-4.0)	3-120 (0.2-8.0)	0-30 (0.0-2.0)	0-60 (0.0-4.0)	0-120 (0.0-8.0)
Supply Pressure (BAR)	20-100 (1.4-6.9)	32-100 (2.2-6.9)	35-100 (2.4-6.9)	65-150 (4.5-10.0)	125-150 (8.6-10.0)	35-100 (2.4-6.9)	65-150 (4.5-10.0)	125-150 (8.6-10.0)
Air Consumption	1.8 scfm (3.05 m ³ /hr) at mid range typical				6.0 scfm (3.17 m ³ /hr) at mid range typical			
Flow Capacity	4.5 scfm (7.7 m ³ /hr) at 25 psig (1.7 BAR)			12.0 scfm (20.0 m ³ /hr) at 100 psig (6.9 BAR)	20.0 scfm (34.0 m ³ /hr) at 150 psig (10.0 BAR)	12.0 scfm (20.0 m ³ /hr) at 100 psig (6.9 BAR)		
	12.0 scfm (20.0 m ³ /hr) at 100 psig (6.9 BAR)						20.0 scfm (34.0 m ³ /hr) at 150 psig (10.0 BAR)	
Temperature Limits	-20° to +150° F (-30° to +65° C)							
Impedance	4-20 mA: 180 Ohms 0-5 VDC: 615 Ohms 0-10 VDC: 1230 Ohms 1-5 VDC: 495 Ohms 1-9 VDC: 955 Ohms	4-20 mA: 240 Ohms 0-5 VDC: 550 Ohms 0-10 VDC: 1100 Ohms 1-5 VDC: 440 Ohms 1-9 VDC: 880 Ohms	4-20 mA: 240 Ohms 0-5 VDC: 550 Ohms 0-10 VDC: 1100 Ohms 1-5 VDC: 440 Ohms 1-9 VDC: 880 Ohms	4-20 mA: 245 Ohms 0-5 VDC: 520 Ohms 0-10 VDC: 1040 Ohms 1-5 VDC: 405 Ohms 1-9 VDC: 900 Ohms	4-20 mA: 280 Ohms 0-5 VDC: 500 Ohms 0-10 VDC: 1000 Ohms 1-5 VDC: 475 Ohms 1-9 VDC: 880 Ohms	4-20 mA: 260 Ohms 0-5 VDC: 450 Ohms 0-10 VDC: 900 Ohms 1-5 VDC: 410 Ohms 1-9 VDC: 830 Ohms	4-20 mA: 300 Ohms 0-5 VDC: 480 Ohms 0-10 VDC: 960 Ohms 1-5 VDC: 460 Ohms 1-9 VDC: 800 Ohms	4-20 mA: 315 Ohms 0-5 VDC: 495 Ohms 0-10 VDC: 990 Ohms 1-5 VDC: 455 Ohms 1-9 VDC: 785 Ohms

Performance Specifications

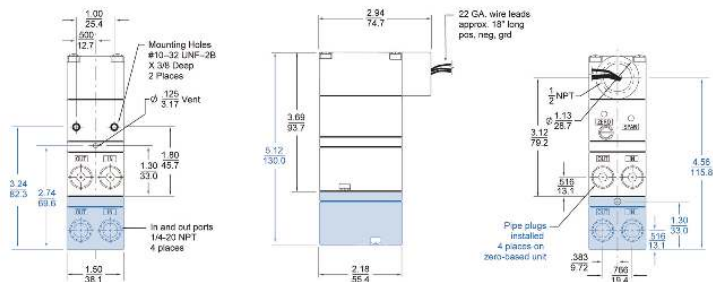
Linearity (Independent)	<±0.5% of span		<±2.0% of span	<±1.5% of span
Hysteresis, & Repeatability	<0.5% of span		<1.0% of span	
Supply Pressure Sensitivity	<0.1% of span per 1.0 psig (0.07 BAR)		<0.4% of span per 1.0 psig (0.07 BAR)	<0.02% of span per 1.0 psig (0.07 BAR)
RFVEM Effect	Less than .5% of span change in output pressure per En 61000-4-3:1998, Amendment 1, Performance Criterion A			

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Dimensional Drawings

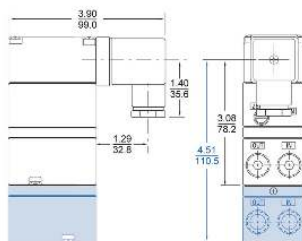
Blue areas and dimensions apply to the zero-based unit only

1/2 inch Conduit Connection (A)



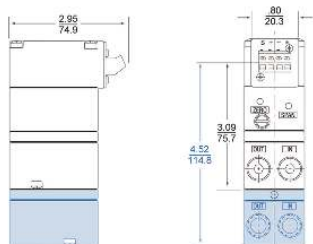
DIN 43650 Connector (D)

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



Terminal Block (T)

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

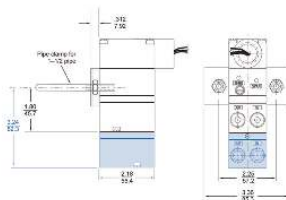


Mounting Options

Pipe Mounting

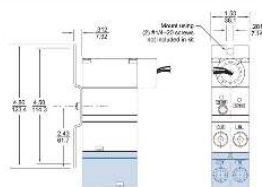
Kit # 448-452-005

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



Panel Mounting

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

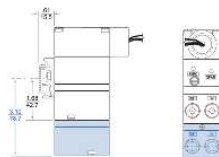


DIN Rail Mounting

Kit # 445-766-024

DIN Rail suitable for EN-50035, EN-50046 and EN-50022 Rails

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



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Physical Specifications

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Ordering Information

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

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.

Intrinsically Safe (DIN & Terminal)

Class I, Division 1, Groups C & D
Temp. Code T4 Ta = 70° C
Rated 4-20 mA, 30 VDC Max.

ATEX Approvals (option K)

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

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 T4 Ta = 70° C

Entity Parameters

Ui (Vmax) = 30 VDC Ci = 0 uF
Ii (Imax) = 125 mA Li = 0 mH
Pi = .7 W Max.

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Classification

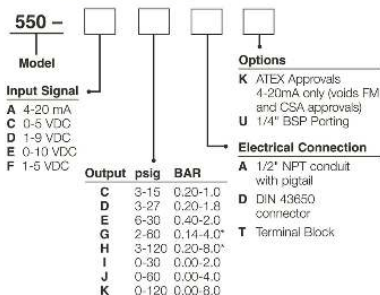
EC Declaration of Conformity

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

EN 50082-1:1998
EN 55011:1990
EN 61010-1:1993 including AMD2:1995

Following the provisions of EMC directive 89/336/EEC

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, and up 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

Warranty

Products are warranted to be free from defects in materials and workmanship for a period of eighteen months from the date of sale, provided said products are used according to recommended usages.