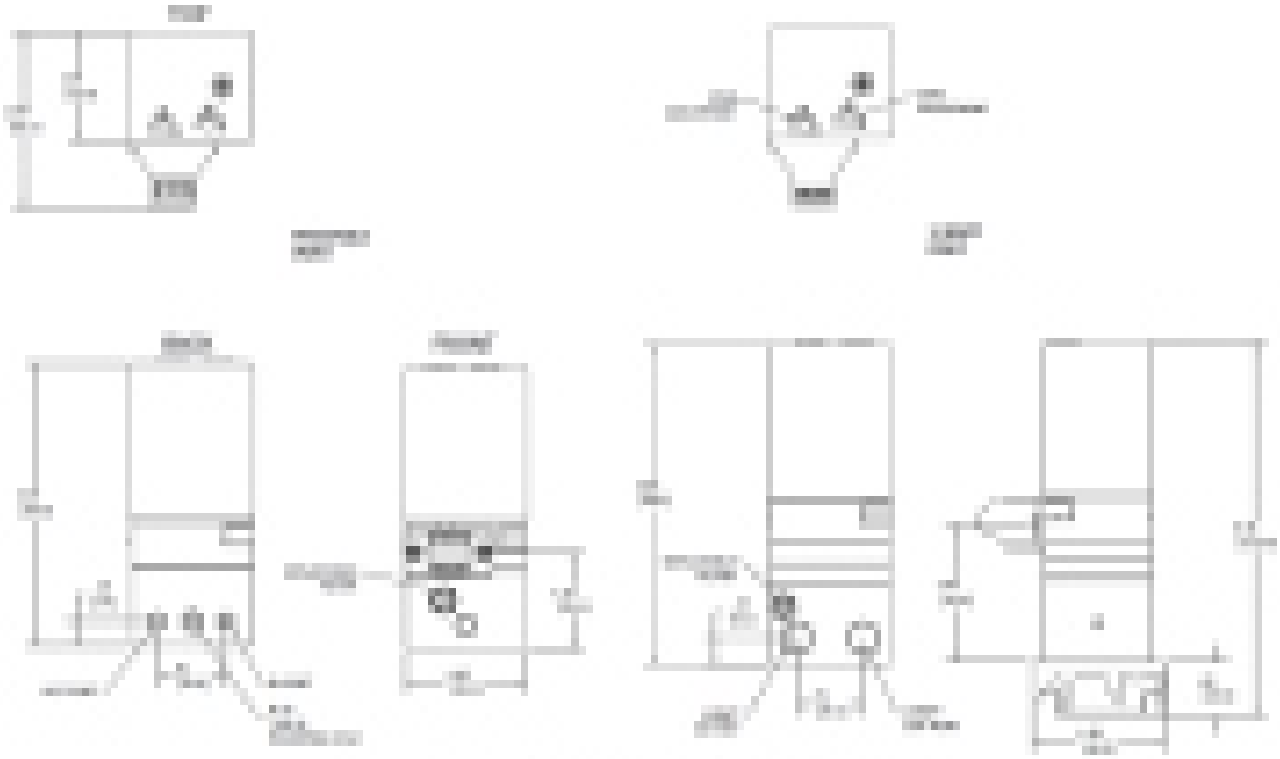
Type 590X

I/P Transducer

Installation, Operation and Maintenance Instructions



Use this coding system to order:

Contents

DANGER, WARNING, CAUTION and NOTE statements

DANGER	Refers to conditions or hazards which could result in serious personal injury or death.
WARNING	Refers to conditions or hazards which could result in personal injury.
CAUTION	Refers to conditions or hazards which could result in equipment or property damage.
NOTE	Alerts you to facts or special instructions.

ALL DANGER, WARNING, AND CAUTION NOTICES MUST BE COMPLIED WITH IN FULL.

SPECIFICATIONS

Functional Specifications

	M-Connection		F-Connection
Input	4-20 mA		
Outputs	3-15 psig 3-27 psig 6-30 psig	0.2-1.0 BAR 0.2-1.8 BAR 0.4-2.0 BAR	
Air Consumption	[illegible] scfh @ 20 psig supply [illegible] scfh @ [illegible] psig supply [illegible] scfh @ 100 psig supply		.1 scfh
Supply Pressure [illegible]	150 psig (8.8 BAR) max.		3-15 [illegible] psig (1.5 BAR) max 3-27, 6-30 40 psig (2.8 BAR) max
Flow Capacity	Same as Air Consumption		2.4 scfm max.
Temperature Limits	[illegible]		
Relative Humidity	[illegible]		
Impedance	[illegible] Ohms @ [illegible]		
Loop Load	[illegible]		

Performance Specifications

Linearity (Independent)	[illegible] of span	
Hysteresis	[illegible] of span	
Deadband	[illegible] of span	
Repeatability	[illegible] of span, [illegible] of span typical	
Mounting Orientation	[illegible]	
Air Supply Sensitivity	[illegible] psig change	[illegible] psig change
Vibration Effect	[illegible]	
Temperature Effect	[illegible] change	

Physical Specifications

Housing	NEMA 1 (IP 20)	
Port Sizes	1/8" NPT (P Connection)	
Media	Clean, dry, oil-free, instrument air, filtered to 40 micron	
Electrical Connections	Terminal block	
Mounting	Pipe, DIN rail or manifold	
Materials	Housing	Chromate-treated aluminum, plastic
	Elastomers	Buna-N
	Trim	Stainless steel, brass, zinc-plated steel
	Cover	Polypropylene
Weight	0.75 lbs (0.34 kg)	

1. INSTALLATION AND APPROVALS

1.1 Pre-installation Requirements

1.1.1 Environment: Suitable for installation in the following locations:

- Intrinsically safe operation in hazardous locations indoors (Nema 1)
- See section 1.5, 1.6 and 1.7 for Factory Mutual (FM), Canadian Standards (CSA) and ATEX approvals.

DANGER All wiring must be made to all local and national codes appropriate to the area of installation.

1.1.2 Electrical Input: 4-20 mAdc current source.

1.1.3 Air supply: Clean, dry, oil free instrument air filtered to 40 micron.

NOTE Clean all pipe lines to remove dirt and scale prior to installation. Failures attributable to instrument air supply contamination are not covered by the warranty.

CAUTION This instrument vents to atmosphere. The use of supply gas other than air can create a hazardous environment.

WARNING The non-metallic cover of the I/P transducer is considered to constitute an electrostatic discharge hazard. Clean only with a damp cloth. [illegible] The I/P transducer enclosure contains aluminum and is considered to constitute a potential risk of ignition by impact or friction and must be taken into account during installation.

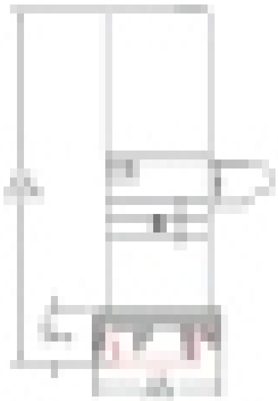
If the [illegible] I/P transducer is installed as Category 3 equipment, then it shall be installed in an enclosure which maintains an ingress protection rating of IP54 and meets the enclosure requirements of [illegible] or [illegible].

The user shall permanently mark the protection type chosen. Once the type of protection has been marked, it shall not be changed.

1.2 Mounting

1.2.1 The Type [illegible] can be mounted to DIN rail using the optional kit that is [illegible] part number [illegible]. This will allow the transducer to mount to DIN [illegible] rails (see figure 1).

Figure 1 – DIN Rail mounting kit [illegible]



1.3 Pneumatic Connections

1.3.1 Clean all pipe lines to remove dirt and scale prior to installation.

1.3.2 Supply air must be filtered to 40 microns and free of moisture and lubricants.

1.3.3 Use 1/8" NPT port to provide the supply air connection.

1.3.4 Use 1/8" NPT port to provide the pneumatic output connection.

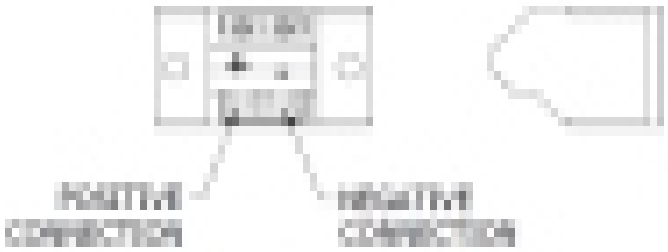
1.4 Electrical Connections

1.4.1 The Type 5000 is a two wire device (does not require a separate power source). It requires a variable input current of 4-20 mA.

1.4.2 Electrical connection is made to the positive (+) and negative (-) terminals. For direct acting operation connect the positive side of the input signal to the (+) terminal (see figure 2).

NOTE: The use of shielded cable is recommended.

Figure 2 – Terminal Block Connections



Terminal	I/P Connection
+	Positive (+)
-	Negative (-)

1.5 FM Approvals (FM) & Canadian Standards (CSA) Approvals

Hazardous Location Units: FM & CSA

Intrinsically Safe

Class I, Div. 1, Groups A, B, C, D

Suitable for:

Class I, Div. 2, Groups A, B, C, D

Temp. Code T4 Tamb 70°C

Entity Parameters

Ui (Vmax) = 30 VDC

Ii (Imax) = 100 mA

Ci = 0

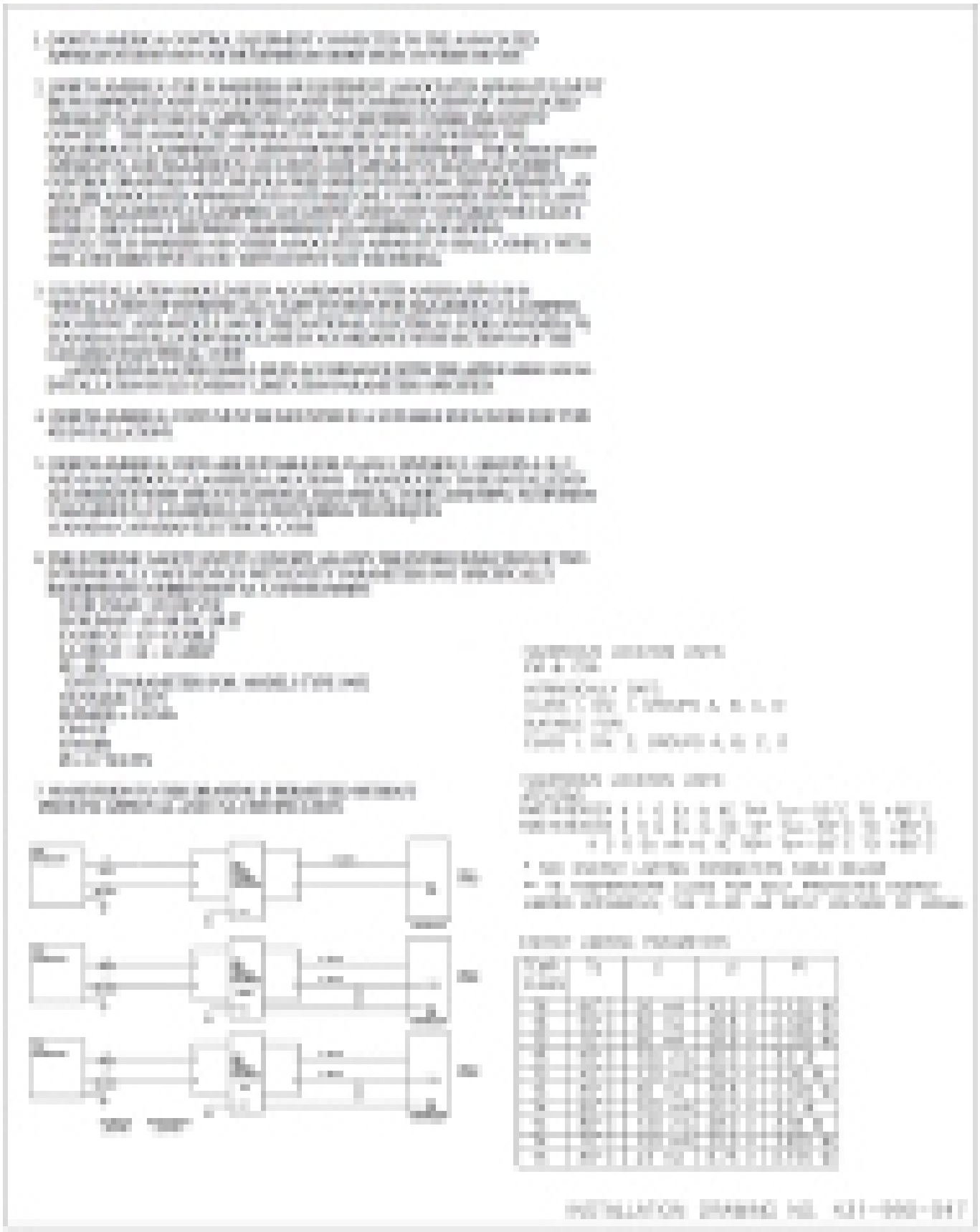
Li = 0

Pi = 0.7 watts max.

1.6 ATEX Approvals

Hazardous Location Units: ATEX

4.7 [illegible]



1.8 EC Declaration of Conformity

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

Declare that the Type 080X Transducer family to which this declaration applies:

Conforms to the emissions requirements of EN 61326-1:1997/A1:1998/A2:2001/A3:2003:
Class A, Radiated Emissions, 30MHz to 1GHz

Conforms to the immunity requirements of EN 61326:1997/A1:1998/A2:2001/A3:2003.

2. OPERATION

2.1 Calibration

2.1.1 All units are shipped from the factory calibrated, direct acting.

NOTE Factory calibration is susceptible to shift due to handling during transit. Customer requirements that all units be recalibrated prior to use.

2.1.2 Though the units are shipped fully calibrated it is suggested that the user check the calibration to ensure that settings and operation match the application requirements.

2.2 Direct Acting Calibration

2.2.1 In direct acting operation the unit is calibrated so that minimum input signal corresponds to minimum output pressure and increasing input signal results in increasing output pressure.

2.2.2 Apply the minimum input signal of the range being used (e.g. 4 mA for a 4-20 mA unit).

2.2.3 Observe the output pressure. If necessary, adjust the zero screw until reaching minimum output pressure setting. Turn zero screw clockwise to increase and counter clockwise to decrease.

2.2.4 Apply the maximum input signal of the range being used (e.g. 20 mA for a 4-20 mA unit).

2.2.5 Observe the output pressure. If necessary, adjust the span screw until reaching maximum output pressure setting.

NOTE For EP (current input) models, turn span screw clockwise to increase pressure, counter clockwise to decrease pressure.

2.2.6 After setting the span it will be necessary to recheck the zero. Repeat steps 1-4 until both end points are at required values.

2.3 Reverse Acting Calibration

2.3.1 For reverse acting calibration, consult the factory.

3. MAINTENANCE AND REPAIRS

NOTE Under normal circumstances, no maintenance should be required.

3.1 Instrument Air Filtration

3.1.1 Failures due to instrument supply air contamination are not covered by warranty.

3.1.2 Use of oil and/or water saturated instrument air can cause erratic operation.

3.1.3 Poor quality instrument air can result in unit failure. It is recommended that a filter regulator (such as Controlair Type 300) be placed upstream of each unit where oil and/or water tainted instrument air is suspected.

3.2 Factory Repairs

3.2.1 In the event of unit failure, the Type 5900 can be returned to the factory through point of purchase for warranty repair if the warranty period has not expired.

3.2.2 All units returned for repair must be authorized prior to receipt at the factory. Contact a representative at the point of purchase to receive a Return Authorization Number.

3.3 Field Repairs

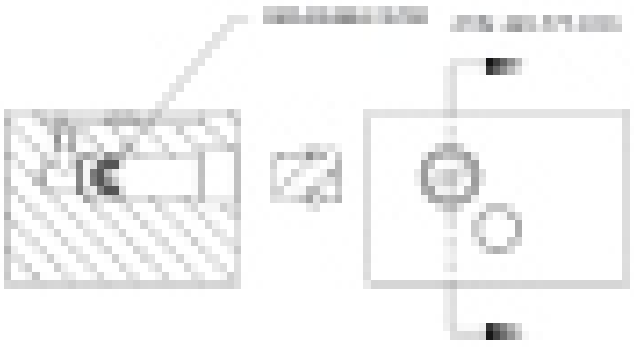
3.3.1 Service kits for elastomer components in the Type 5900 are available. Consult factory for kit numbers and availability.

3.3.2 Replacement components for the Type 5900 are available. Consult factory for part numbers and availability.

3.4 Filter Replacement

3.4.1 Supply pressure can become obstructed should the felt filter element become clogged. To replace filter (P/N: 333-777-010), remove slotted plug and carefully remove filter using forceps. Ensure no dust or dirt particles remain in filter chamber. Insert new filter into chamber in orientation as shown in figure 3. Replace slotted plug, making sure o-ring is properly seated.

Figure 3 – Replacing Filter



4. TROUBLESHOOTING

PROBLEM	LOOK FOR:	SOLUTION
No or low output	Zero adjustment Clogged filter Supply pressure too low	Reset zero (3.2.5) Replace filter (see figure 5) Increase supply pressure (see specs)
Unstable / low output	Electrical connection	Check connection/signal (1.4.2)
Erratic operation	Liquid contamination in air supply	Clean air supply (1.1.3)
Works in reverse	Pressure goes down when signal is increased	Reverse input wires (1.4.2)
Output equals supply pressure	Improper pneumatic connections	Insure that supply is connected to "P" port and output is connected to "OUT" port (1.3.3, 1.3.6)

NOTE If problems are not solved by troubleshooting procedures, contact a factory application engineer at (800) 366-4488 for further assistance.

5. WARRANTY & DISCLAIMER

Controlair, Inc. 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 Controlair, Inc. recommended usages. Controlair, Inc.'s liability is limited to the repair, purchase price refund, or replacement in kind, at Controlair, Inc.'s sole option, of any products proved defective. Controlair, Inc. reserves the right to discontinue manufacture of any products or change products materials, designs 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.