



Type 2000

Pneumatic and Electro-Pneumatic Valve Positioner

Stable and accurate positioning of rotary and linear valves

The ControlAir Type-2000 pneumatic and electro-pneumatic positioner provides stable and accurate positioning of rotary and linear valves. The force balanced instrument is simple, reliable and user friendly for calibration, maintenance and field upgrades. The electro-pneumatic unit is available with worldwide safety approvals in an Intrinsically Safe and Explosion-proof version. The NEMA-4X (IP 66) housing provides rugged resistance to severe industrial environments. The modular design of the Type-2000 allows multiple feature ordering options or easy field conversions.

Features

- **Modular construction** Base pneumatic unit can be quickly field converted to a fully optioned electro-pneumatic unit.
- **Rotary and linear, single and double acting**
- **Optional 4-20 mA feedback on mechanical switches**
- **External zero adjustment for easy calibration**
- **Compact design Small size and low weight**
- **Vibration, position and shock insensitive**
- **Stainless steel spool valve**
Long operating life
- **High gain pilot valve**
Provides quick and accurate valve/actuator response
- **Standard pointed indicator (rotary), standard blank cover (linear) and optional raised beacon**
- **High maximum supply pressure**
145 psig (10 Bar)
- **FM, CSA & ATEX approvals**
For Intrinsically Safe (CA2010/CA2011) and Explosion-proof (CA2020/CA2021) operation



Type 2000 Pneumatic and Electro-Pneumatic Valve Positioner

Type 595XP Explosion-proof I/P Transducer
(CA2020/CA2021)

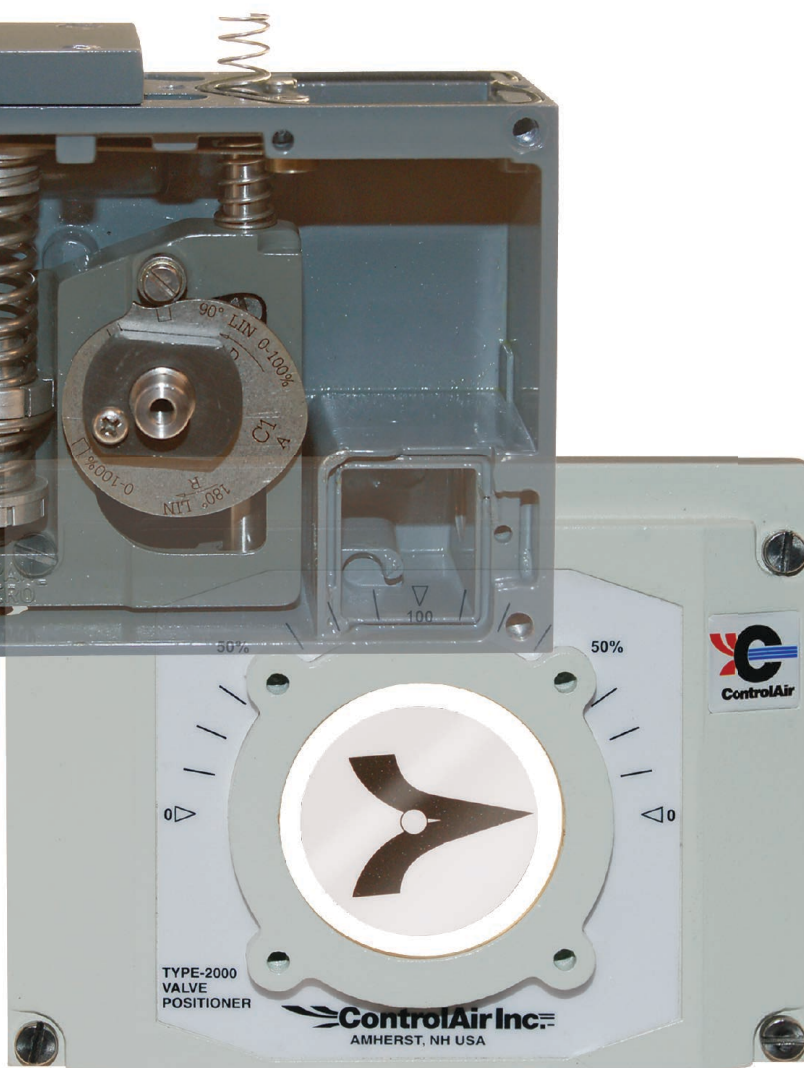


Type 590X
Intrinsically Safe
I/P Transducer
(CA2005/CA2010/CA2011)



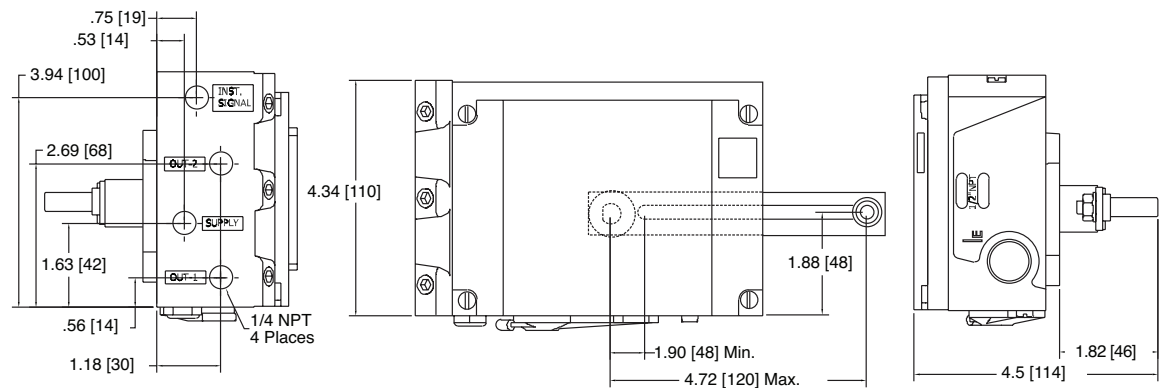
Type 2000
Pneumatic Positioner
(CA2000)

Standard Cover with
Arrow Indicator (Rotary)

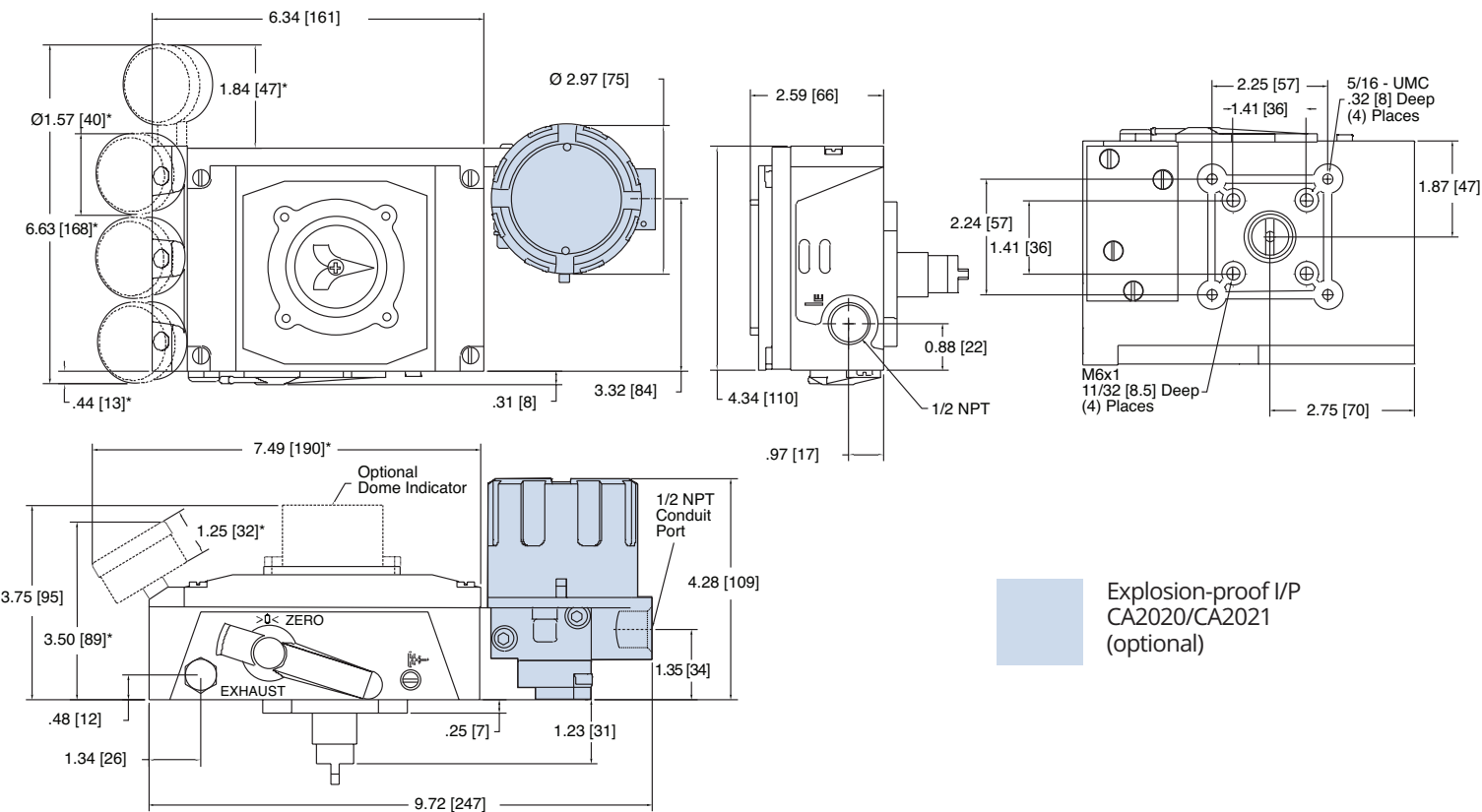


Dimensions In [mm]

Linear

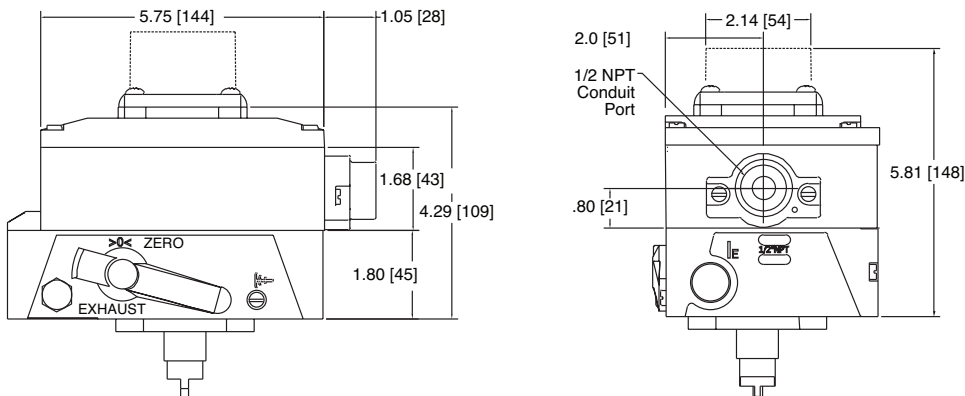


Rotary



Explosion-proof I/P
CA2020/CA2021
(optional)

Feedback / Switch (Option)



Type 2000 Pneumatic and Electro-Pneumatic Valve Positioner

Functional Specifications

Type-2000	Pneumatic (CA2000)		Electro-Pneumatic (CA2005/CA2010/CA2011)	
Input Signal	3-15 PSI (0.2-1.0 Bar)		4-20 mA (Ri<250 ohms)	
Supply Pressure	<145 PSI (<10 Bar)		21.8-145 PSI (1.5-10 Bar)	
Linearity Error	<0.7 % f.s		<1.0% f.s	
Hysteresis	<0.4% f.s		<0.6% f.s	
Repeatability	<0.3% f.s		<0.5% f.s	
Pressure Gain	750 P out/P in		750 P out/P in	
Flow Capacity @29 PSI (2.0 Bar) @87 PSI (6.0 Bar) @145 PSI (10 Bar)	SCFM 9.5 28.3 47.1	NI/min 268.9 800.1 1333	SCFM 9.5 28.3 47.1	NI/min 268.9 800.1 1333
Air Consumption @29 PSI (2.0 Bar) @87 PSI (6.0 Bar) @145 PSI (10 Bar)	SCFM 0.18 0.53 0.88	NI/min 5.09 424.5 707.5	SCFM 0.2 0.6 1.0	NI/min 5.7 17.0 28.3
Impedance			260 Ohms @ 70 °F	
Loop Load			5.2 Volts @ 70 °F	

Mechanical Switches (S & FS Option)	
Input Signal	Honeywell V15S05-CZ100 A05-01
Switch Type	SPDT
Loop Load	5A 125/250 VAC/0.1A 48 VDC
Operating Force	100gf
Position Feedback (F & FS Option)	
Voltage Supply	12-30 VDC
Output	2 Wire; 4-20 mA DC
Loop Impedance	Max. 700Ω @ 24 VDC
Linearity Error	<1.5% F.S.
Hysteresis Error	<0.5% F.S.

Physical Specifications

Temperature Range	-40° to 185° F (-40° to 85° C)	
Port Sizes	Pneumatic: 1/4" NPT; Gauge Ports - 1/8" NPT Electric: 1/2" NPT; M20-1.5 (ATEX)	
Media	Clean, dry, oil-free instrument air, filtered to 40 micron	
Enclosure	Nema 4X / IP66 aluminum with polyester epoxy finish	
Weight	3.5 lbs (1.6 kg) 5.1 lbs (2.3 kg)	3.8 lbs (1.7 kg) CA2005/CA2010/CA2011 5.4 lbs (2.5 kg) CA2005 with feedback 4.8 lbs (2.2 kg) CA2020/CA2011

Ordering Use this coding system to order

Model	Type of Motion	Cam	Type of Positioner	Spindle	Indicator	Feedback/ Switches (factory installed)
CA20	R Rotary L Linear	C1 90°/180° (Standard Rotary) C2 45°/90° C3 30°/60° (Standard Linear)	00 P/P Pneumatic 05 E/P Electro-pneumatic; no approvals; general purpose only 10 E/P Electro-pneumatic; FM/CSA Intrinsically Safe 11 E/P Electro-pneumatic; ATEX Intrinsically Safe 20 E/P Electro-pneumatic; FM/CSA Explosion-proof 21 E/P Electro-pneumatic; ATEX Flame-proof	0 Namur (Rotary) 1 Standard (Linear) 2 3/8" Square 3 1/2" Square	N None (Standard Linear) A Arrow (Standard Rotary) D Dome (Option)	CA20-05-R or CA20-00-R only F 4-20 mA Feedback S Mechanical Switch (2 spdt) FS 4-20 mA Feedback & mechanical switches



Accessories

Gauges	0-30 psi (0-2 bar), 1/8" NPT Back Mount	P/N: 446-725-006
	0-160 psi (0-11 bar), 1/8" NPT Back Mount	P/N: 446-725-008
	0-30 psi (0-2 bar), 1/8" NPT Bottom Mount	P/N: 446-725-033

Approvals

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

2010	Intrinsically Safe Class I, Division 1, Groups A, B, C, D Nonincendive Class I, Division 2, Groups A, B, C, D
2020	Intrinsically Safe Class I, II & III, Division 1, Groups A, B, C, D, E, F, G Explosion-Proof Class I, Division 1, Groups B, C, D Dust Ignition-Proof Class II, III, Division 1, Groups E, F, G

Model	ATEX Approvals
2011	Intrinsically Safe II 1 G Ex ia IIC T4/T5/T6
2021	Intrinsically Safe II 1 G Ex ia IIC T4/T5/T6 Flame-Proof - ATEX II 2 G Ex d IIB + H2 T6 II 2 D Ex tD A21 T850C

Entity Parameters
Ui (Vmax) = 40 VDC
Li (Imax) = 125 mA
Ci = 0
Li = 0
Pi = 0.7 watts max.

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Warranty 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. Drawing downloads available at www.controlair.com

