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

![Linear Dimensions Diagram]

### Rotary

![Rotary Dimensions Diagram]

### Feedback / Switch (Option)

![Feedback / Switch Diagram]

---

**Explosion-proof I/P CA2020/CA2021 (optional)**
**Functional Specifications**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Signal</td>
<td>3-15 PSI (0.2-1.0 Bar)</td>
<td>4-20 mA (Ri&lt;250 ohms)</td>
</tr>
<tr>
<td>Supply Pressure</td>
<td>&lt;145 PSI (&lt;10 Bar)</td>
<td>21.8-145 PSI (1.5-10 Bar)</td>
</tr>
<tr>
<td>Linearity Error</td>
<td>&lt;0.7 % f.s</td>
<td>&lt;1.0 % f.s</td>
</tr>
<tr>
<td>Hysteresis</td>
<td>&lt;0.4 % f.s</td>
<td>&lt;0.6 % f.s</td>
</tr>
<tr>
<td>Repeatability</td>
<td>&lt;0.3 % f.s</td>
<td>&lt;0.5 % f.s</td>
</tr>
<tr>
<td>Pressure Gain</td>
<td>750 P out/P in</td>
<td>750 P out/P in</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flow Capacity</th>
<th>SCFM</th>
<th>NI/min</th>
<th>SCFM</th>
<th>NI/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>@29 PSI (2.0 Bar)</td>
<td>9.5</td>
<td>268.9</td>
<td>9.5</td>
<td>268.9</td>
</tr>
<tr>
<td>@87 PSI (6.0 Bar)</td>
<td>28.3</td>
<td>800.1</td>
<td>28.3</td>
<td>800.1</td>
</tr>
<tr>
<td>@145 PSI (10 Bar)</td>
<td>47.1</td>
<td>1333</td>
<td>47.1</td>
<td>1333</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air Consumption</th>
<th>SCFM</th>
<th>NI/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>@29 PSI (2.0 Bar)</td>
<td>0.18</td>
<td>5.09</td>
</tr>
<tr>
<td>@87 PSI (6.0 Bar)</td>
<td>0.53</td>
<td>424.5</td>
</tr>
<tr>
<td>@145 PSI (10 Bar)</td>
<td>0.88</td>
<td>707.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Impedance</th>
<th>260 Ohms @ 70˚ F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loop Load</td>
<td>5.2 Volts @ 70˚ F</td>
</tr>
</tbody>
</table>

**Physical Specifications**

- Temperature Range: -40˚ to 185˚ F (-40˚ to 85˚ C)
- Port Sizes: Pneumatic: 1/4” NPT; Gauge Ports - 1/8” NPT
- 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)
- Weight: 3.8 lbs (1.7 kg) / 5.4 lbs (2.5 kg) CA2005 with feedback

**Ordering**

Use this coding system to order

- **Model**: CA20
- **Type of Motion**: R (Rotary), L (Linear)
- **Type of Positioner**: 00 (Pneumatic), 05 (Electro-pneumatic; no approvals; general purpose only), 10 (Electro-pneumatic; FM/CSA Intrinsically Safe), 11 (Electro-pneumatic; ATEX Intrinsically Safe), 20 (Electro-pneumatic; FM/CSA Explosion-proof), 21 (Electro-pneumatic; ATEX Flame-proof)
- **Gauges**: 0-30 psi (0-2 bar), 1/8” NPT Back Mount
- **Switches**: SPDT, 4-20 mA
- **Feedback Switches**: (factory installed)
- **Feedback Switches**: CA20-05-R or CA20-00-R only
- **Linearity Error**: <0.5% F.S. for CA2005/CA2010/CA2011
- **Supply Pressure**: @29 PSI (2.0 Bar) 0.18 (5.09 Nl/min) / 0.2 (5.7 Nl/min)
- **Voltage**: 12-30 VDC
- **Output**: 2 Wire: 4-20 mA DC
- **Loop Impedance**: Max. 700Ω @ 24 VDC
- **Linearity Error**: <1.5% F.S.

**Approvals**

- **Factory Mutual (FM) & Canadian Standards (CSA) Approvals**
  - **Model 2010**: Intrinsically Safe
    - Class I, Division 1, Groups A, B, C, D
  - **Model 2020**: Intrinsically Safe
    - Class I, II & III, Division 1, Groups A, B, C, D, E, F, G
  - **Model 2021**: Intrinsically Safe
    - Class II, III, Division 1, Groups E, F, G

- **ATEX Approvals**
  - **Model 2011**: Intrinsically Safe
    - I II G Ex ia IIC T4/T5/T6
  - **Model 2021**: Intrinsically Safe
    - I II G Ex ia IIC T4/T5/T6

**Accessories**

- **Gauges**: 0-30 psi (0-2 bar), 1/8” NPT Back Mount
- **Switches**: SPDT, 4-20 mA

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.

---

*ControlAir, Inc.*  
8 Columbia Drive / Amherst, NH 03031 USA / www.controlair.com / sales@controlair.com / 603-886-9400 / FAX 603-889-1844  
An ISO 9001:2015 Registered Company  
PIN 441-025-063 12/18