Fine Controls have been supplying process controls & instrumentation equipment since 1994, & now serves an ever expanding customer base, both in the UK & globally.

We offer a full range of valve & instrumentation products & services, with our product range representing leading technologies & brands:

**Flow:** Flow Meters & Transmitters, Flow Switches, Flow Control Valves & Batch Control Systems

**Temperature:** Temperature Probes & Thermowells, Temperature transmitters, Temperature Regulators & Temperature Displays

**Level:** Level Transmitters & Switches

**Pressure:** Pressure Gauges & Transmitters, Precision & High Pressure Regulators & I-P Converters, Volume boosters.

**Precision Pneumatics:** Pressure Regulators, I-P Converters, Volume Boosters, Vacuum Regulators

**Valves:** Solenoid & Pneumatic Valves, Control Valves & Positioners, Actuated Ball, Globe or Diaphragm Valves & Isolation Valves

**Services:** Repair, Calibration, Panel Build, System Design & Commissioning
Transducers
Models 77 and 771 Current-to-Pneumatic Transducers

Introduction

Features & Benefits
- High signal sensitivity for demanding applications
- Simplified design ensures simplified operation
- Rugged, NEMA construction, with insensitivity to shock, vibration, and supply pressure variations accommodate operation in harsh industrial environments
- Choice of output capacities provides application versatility

Description
The Models 77 and 771 convert a DC millampere input signal to a pneumatic output signal directly proportional to the input. Their rugged design and ability to withstand shock and vibration allow them to be installed in even the harshest industrial environments.

Model 77 Current-to-Pneumatic Transducer
The Model 77 Current-to-Pneumatic Transducer, which was designed specifically for measuring circuits, converts the output of an electronic measuring device to a pneumatic signal for indication, recording, computation, or control. It can also be used to convert an electronic controller's signal to operate a final control element, such as a control valve circuit that requires a high degree of accuracy.

The Model 77 is typically used to signal a valve positioner. If it is used for direct-loading of valve actuators or other large volumes, a volume booster relay is required to minimize time lags and the effects of leakage.

Model 771 Current-to-Pneumatic Transducers
The Model 771 Current-to-Pneumatic Transducers were designed as a cost-effective valve service current-to-pneumatic transducer. The Model 771 receives the output signal of an electronic device, such as a PID control function, and drives a control valve via the transducer until the control function is satisfied. For measuring circuits, or for control circuits requiring a higher degree of transducing accuracy, the Model 77 should be used.

Because it’s boosted output capacity minimizes time lags and the effects of leakage, the Model 771B should be used for direct-loading of valve actuators or other large volumes. If the valve actuator includes a valve positioner, a Model 771S should be used.

Specifications – Model 77

Functional Specifications
Supply Pressure
- 20 psig, ±2 psig for 3-15 psig output
- 30 psig, ±2 psig for 3-27 psig output

Input/Output Data
See Model Selection

Model 77
- For general purpose and non-incendive applications

Model 77F
- For intrinsically-safe applications

Zero Offset Adjustment
- +40% and -20% of span

Pneumatic Connections
- 1/4" NPT

Output Capacity
- 0.16 scfm

Supply Pressure Effect
- Less than 1% of span (change of output for supply change from 18 to 22 psig)

Temperature Range
- -40 to 180°F (-40 to 82°C)

Electrical Connections
- Enclosed terminal block, 1/2" threaded
Transducers
Models 77 and 771 Current-to-Pneumatic Transducers

**Surface Mounting**
Two 1/4 x 20 x 5/16” deep blind tapped holes

**Enclosure**
NEMA 3R
NEMA 4 via conduit vent

**Electrical Classification**
FM Approved
Model 77
Non-incendive for Class I, Div. 2, Groups A, B, C, D.
Dust-ignition proof for Class II, Div. 1, Groups E, F, G.
Suitable for Class III, Div. 1 hazardous locations and NEMA 4.
Model 77XF
Intrinsically safe for Class I/II/III, Div. 1, Groups A, B, C, D, E, F, G and NEMA 4 when used with approved barriers and converters listed on Siemens drawing #15032-7704/7705.

**Performance Specifications**
**Calibration Accuracy**
±0.25% of span

**Reproducibility**
0.2% of span

**Response Level**
0.025% of span

**Model Number**
Current-to-Pneumatic Transducer
Exhaust
- Atmospheric
- Tapped Exhaust

**Input/Output**

<table>
<thead>
<tr>
<th>Input Range (mA dc)</th>
<th>Output Range (psig)</th>
<th>Impedance (Ohms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 5</td>
<td>3 to 15</td>
<td>2450</td>
</tr>
<tr>
<td>0 to 4</td>
<td>3 to 15</td>
<td>2450</td>
</tr>
<tr>
<td>4 to 20</td>
<td>3 to 27</td>
<td>610</td>
</tr>
<tr>
<td>4 to 20</td>
<td>3 to 15</td>
<td>185</td>
</tr>
<tr>
<td>10 to 50</td>
<td>3 to 15</td>
<td>30</td>
</tr>
</tbody>
</table>

**Intrinsically-Safe Designation**
- Intrinsically Safe (omit for other classifications)

**Accessories**
- Reverse Acting Output

**Specifications – Series 771**

**Functional Specifications**

**Supply Pressure**
20 psig (35 psig for 771-8 _ _ _)

**Input/Output Data**
See Model Selection

**Zero Offset Adjustment**
+40% and –20% of span

**Output Capacity**
Standard: 0.16 scfm
Boosted: 2.0 scfm

**Supply Pressure Effect**
Less than 2% of span (change of output for supply change from 18 to 22 psig)

**Temperature Range**
-40 to 180°F (-40 to 82°C)

**Electrical Connections**
Enclosed terminal block, 1/2” threaded
Enclosed
NEMA 3R
NEMA 4 via conduit vent

**Electrical Classification**
FM Approved
Series 771 _ _ _ F1: Intrinsically safe for Class I/II/III, Div. I, Groups A, B, C, D, E, F, G when used with approved barriers and converters listed on Siemens drawing #15032-7704/7705.

**Performance Specifications**

**Calibration Accuracy**
±1/2% of span standard unit
±1% of span boosted unit

**Reproducibility**
0.2% of span

**Response Level**
0.025% of span

1) Other input ranges available; 0 - 3 mA to 0-2500 mA.
Transducers
Models 77 and 771 Current-to-Pneumatic Transducers

Ordering data

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current-to-Pneumatic Transducer</td>
<td>771-</td>
</tr>
<tr>
<td>Input/Output</td>
<td>3 8 16 40</td>
</tr>
<tr>
<td>Input Range1 (mA dc)</td>
<td>3 to 15 2450</td>
</tr>
<tr>
<td>Output Range (psig)</td>
<td>3 to 15 610</td>
</tr>
<tr>
<td>Impedence (Ohms)</td>
<td>3 to 15 185</td>
</tr>
<tr>
<td>10 to 50</td>
<td>3 to 15 30</td>
</tr>
</tbody>
</table>

Output Capacity
- Boosted
- Standard

Options
- None Required
- Terminal Strip

Electrical Approval
- None Required
- Intrinsically Safe
- Non-incendive

Accessories
- P/N 12330-100 - Wall Mount Bracket
- P/N 12334-130 - Pipe Mounting Bracket
- Reverse Acting (not available on the Model 771-8)
  Increase input; decrease output. Add “R” to model number.

Mounting Dimensions – Model 77

Notes:
1. All connections are 1/4 NPT except as shown.
2. Must be mounted vertically (±10°) as shown.
3. Flat adapter plate (P/N 12330-100) available to mount transducer on a blind wall.
Transducers
Models 77 and 771 Current-to-Pneumatic Transducers

Mounting Dimensions – Model 771 S/B

Notes:
1. Sealing screw must not be removed in a Class II hazardous location or under any NEMA 4 condition.
2. Dimensions are shown in inches and (millimeters).
3. Clearance of at least 5” (127mm) must be left above the top when mounting the transducer to permit removal of shipping and restriction screws and top cap (standard capacity models) and retaining nut (boosted models).
4. Transducer must be installed so that water cannot enter booster exhaust under NEMA 4 conditions (boosted models).
5. Transducer must be installed within 10° of vertical.