Introduction

Features & Benefits
- High signal sensitivity for demanding applications or
- 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. In addition, their exhaust can provide a light purge of the terminal enclosure by plugging the drain hole, making both the Model 77 and Series 771 suitable for use in corrosive 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 of an electronic signal, 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 its 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 85°C)

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

Technical data

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 77F
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 Moore drawing #15032-7704/7705,
and when installed per manufacturer’s instructions.

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

<table>
<thead>
<tr>
<th>Input/Output</th>
<th>Output</th>
<th>Input Impedence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range (mA dc)</td>
<td>Range (psig)</td>
<td>(Ohms)</td>
</tr>
<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 85°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, G when used with approved barriers
and converters listed on Moore drawing #15032-7704/7705,
and when installed per manufacturer’s instructions.
Series 771_ _ _ F2: Non-incendive for Class I, Div. 2,
Groups, A, B, C, D. Dust-ignition proof for Class II, Div. 1,
Groups E, G. Suitable for Class III, Div. 1 hazardous locations.

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.
Models 77 and 771 Current-to-Pneumatic Transducers

### Model Number
- Current-to-Pneumatic Transducer

<table>
<thead>
<tr>
<th>Input/Output</th>
<th>Input Range (mA dc)</th>
<th>Output Range (psig)</th>
<th>Impedance (Ohms)</th>
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<tr>
<td>1 to 5</td>
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<td></td>
</tr>
</tbody>
</table>

### Output Capacity
- Boosted
- Standard

### Options
- None Required
- Terminal Strip

### Electrical Approval
- None Required
- Intrinsically Safe Class I, II, III Div. 1, Groups A, B, C, D, E, G
- Non-Incendive Class 1, Div. 2, Groups A, B, C, D. Dust-ignition proof Class II, Div. 1, Groups E, G. Suitable for Class III, Div. 1 hazardous locations

### Ordering data

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Accessories</th>
</tr>
</thead>
<tbody>
<tr>
<td>771-</td>
<td>P/N 12330-100 - Wall Mount Bracket</td>
</tr>
<tr>
<td></td>
<td>P/N 12334-130 - Pipe Mounting Bracket</td>
</tr>
<tr>
<td></td>
<td>Piped Airset</td>
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</tbody>
</table>

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 TRANSUDER ON A BLIND WALL.
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.