CONOFLOW ELECTRO-PNEUMATIC TRANSDUCERS

GT210 Series
Miniature I/P-E/P Transducers

Conoflow's Electropneumatic Transducers accept a variety of electrical input signals and convert them to proportional pneumatic output signals.

The miniature transducer is available with two different circuit boards. One board accepts current inputs of 4-20/10-50 mA DC and the other accepts inputs of 0-5/ 1-9 VDC. Each board utilizes a range selector jumper switch which can be positioned to accept a 4-20 or 10-50 mA DC input or a 0-5 or 1-9 VDC input, respectively.

Connection of electrical source is made through a 1/2" NPSM conduit connection in two different manners. One unit is offered with a metal cover having a removable top access cover for direct connection to the internal terminal block. The second option is made through connection to 2 leads which are 20" long (#18 GA. wire - 20" long/positive red - negative black). All operation adjustments (zero and span adjustments) are accessible from the front of the transducer. As an added feature, the conduit connection is optionally available equipped with a Hirschmann connector.

These units are available with output signals of 3-15, 3-27, or 6-30 PSIG (21-103, 21-186, or 41-207 kPa). Special output signals are available, consult the factory. The unit can be mounted in any position and output signals are field reversible. Supply pressures up to 40 PSI (276 kPa) can be used. Optional gauge ports are available for monitoring the output signal.

Intrinsically Safe approvals are listed for both incendive and non-incendive barriers.

The GT210 (with metal cover) Series Transducer, when purchased with an EMI-RFI Adaptor (6386522), conforms to SAMA PMC33.1-1978 for Classes 1 and 2, Bands A, B and C with less than 0.25% error.

Typical applications for these units include controllers, relays, HVAC systems, energy management systems, valve actuators and control room applications.

DIMENSIONAL DATA - ADVERTISING DRAWINGS:

GT210: A28-45 Metal cover with top access cover
GT210: A28-46 Metal cover with 20" leads
GT210: A28-50 2" Pipe Mounting Bracket

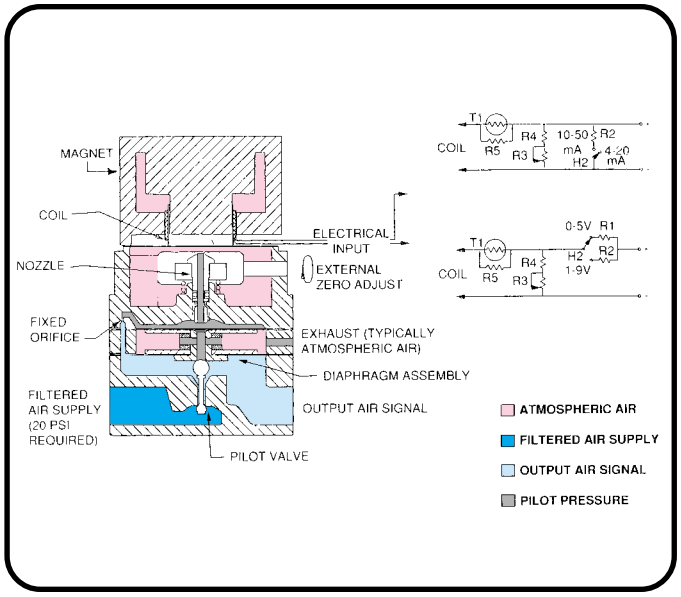
PRINCIPLE OF OPERATION

The Conoflow GT210 Series Transducers are force balance units which accept 4-20 mA DC, 10-50 mA DC, 0-5 VDC or 1-9 VDC inputs and convert them to a proportional 3-15, 3-27, or 6-30 PSIG (21-103, 21-186, or 41-207 kPa) output signal.

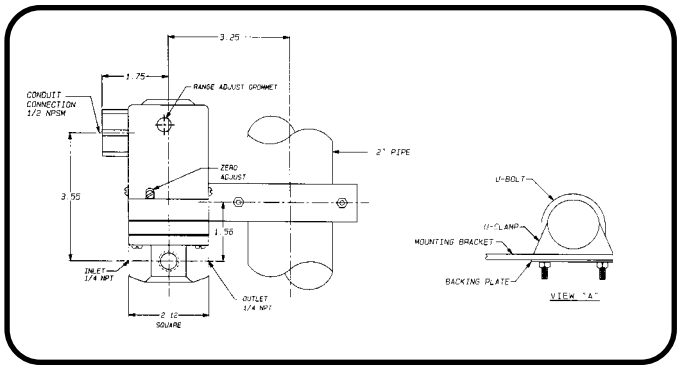
In the direct acting mode, an increase in the input signal causes the coil to move away from the magnet which moves the flexure assembly toward the nozzle. This reduces the flow through the nozzle increasing the back pressure in the top chamber of the booster. The increased pressure in the booster causes the diaphragm assembly to move downward, opening the pilot valve and increasing the output pressure. The output pressure will continue to increase until it is equal to the nozzle back pressure and the forces on the diaphragm assembly are balanced.

A decrease in the input signal allows the coil to move toward the magnet which moves the flexure assembly away from the nozzle. This allows the flow through the nozzle to increase which reduces the back pressure in the top of the booster. Since the output pressure is greater than the nozzle back pressure, there is a net upward force on the diaphragm assembly which causes it to move upward allowing the pilot valve to close and the relief port to close. The excess output pressure is vented to atmosphere through the relief port until equilibrium is established.

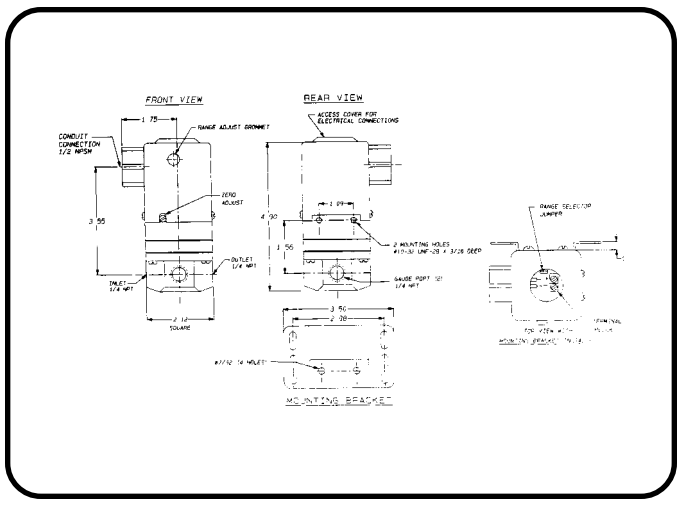
In the reverse acting mode, an increase in the input signal causes the coil to move toward the magnet instead of away from it since the direction of the current through the coil is reversed. An increasing signal, therefore, causes a proportionally decreasing output.



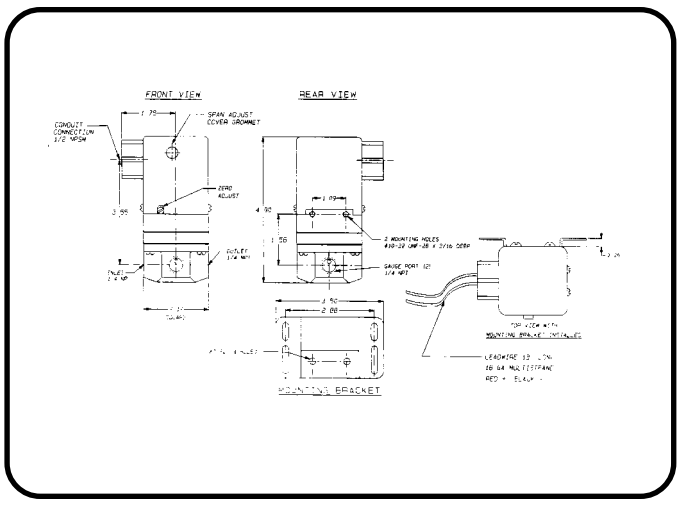
GT210 Series Transducer



For Certified Dimensional Drawing, refer to A28-50



For Certified Dimensional Drawing, refer to A28-45



For Certified Dimensional Drawing, refer to A28-46

OPERATING CHARACTERISTICS	GT2108ED GT2108FD	GT4108ED GT4108FD	GT6108ED GT6108FD	GT2102HD GT2102JD	GT4102HD GT4102JD	GT6102HD GT6102JD
Input Range (4)	4-20 mA DC 10-50 mA DC			0-5 VDC 1-9 VDC		
Nominal Input Impedance	225 ohms 91 ohms			385 ohms 535 ohms		
Output Signal	3-15 PSI (21-103 kPa)	3-27 PSI (21-186 kPa)	6-30 PSI (41-207 kPa)	3-15 PSI (21-103 kPa)	3-27 PSI (21-186 kPa)	6-30 PSI (41-207 kPa)
PositionEffect	3 PSIG Output - Output decreases by 0.65 PSIG at 45° tilt. - Output decreases by 2.03 PSIG at 90° tilt. 15 PSIG Output - Output decreases by 0.78 PSIG at 45° tilt. - Output decreases by 2.54 PSIG at 90° tilt.					
Supply Pressure Effect	0.08 PSIG decrease for every 10 PSIG increase in supply pressure					
Required Regulated Air Supply Pressure	20 PSI (138 kPa)	35 PSI (241 kPa)		20 PSI (138 kPa)	35 PSI (241 kPa)	
Air Consumption	0.1 SCFM (0.003 m3/min)					
Air Delivery Rate (Max.)	4 SCFM (0.1113 m3/min)					
Exhaust Rate (Max.)	1.5 SCFM (0.042 m3/min)					
Linearity	± 0.75% of Span					
Ambient Temperature Range	0° to +130°F (-17° to +55°C)					
Approx. Shipping Weight	1.7 lbs. (0.77 Kg)					

NOTES:
1. Refer to Control Engineering Data for catalog number make-up.
2. An ITT Conoflow Model GFH60 Airpak®, Filter-Regulator or equal is recommended.
3. Minimum piping requirements are 3/8" tubing or 1/4" pipe.
4. Intrinsically Safe Approvals:
   A. The GT210, GT410 and GT610 Series Transducers have been Factory Mutual approved intrinsically safe for Class I, Division 1 and non-incendive for Class I, Division 2, applicable groups when interfaced with one of the barriers listed below.

BARRIER	GROUPS
BAILEY CONTROLS NO. 76610AAAV1	C & D
LEEDS & NORTHRUPS P/N 316569 & 316747	C & D
FOXBORO INTERFACE MODULE NO'S 2AO-V21-FGB, 2AO-VA1-FGB 2AO-V31-FGB, 2AT-SBU-FGB 3A2-D31 CS-E/FGB-A, 3A2-D21 CS-E/FGB-A	C & D
HONEYWELL NO'S 3845-0000-0110-111-F5D5 3845-0000-0110-112-F5D5 3845-0000-0110-113-F5D5	C & D
PEPPERLAND AND FUCHS, INC. MODEL KHP-104/Ex-2A (SINGLE AND DUAL CHANNEL) MODEL KHD3-ICD/Ex132	C & D
PROCESS AUTOMATED BUSINESS NO. 1150FZ81010	C & D
STAHL BARRIERS 8901/31-280/100/70 8901/33-293/000/79 9001/01-280-100-10	C & D
ELCON BARRIERS 1072, 1022, 1032	C & D

CONTROL ENGINEERING DATA

Control Engineering Data is intended to provide a single source from which one can determine, in detail, the full scope of the product line. Operating principles and dimensional data are found in the instruction manual. Control Engineering Data also provides a means of communicating, by way of a code number, which is fully descriptive of the product selection.

NOTE: 1. Catalog numbers as received must contain eleven (11) characters.

1-5 Models

GT210 = 3-15 PSI (21-103 kPa) Output
GT410 = 3-27 PSI (21-186 kPa) Output
GT610 = 6-30 PSI (41-247 kPa) Output
GT810 = Special Output (Note 1)
GT21R = 15-3 PSI (103-21 kPa) Output
GT41R = 27-3 PSI (186-21 kPa) Output
GT61R = 30-6 PSI (247-41 kPa) Output
GT81R = Special Output (Reverse Acting) (Note 1)
NOTE: 1. Customer to specify output span required (Consult Factory)

6 Electrical Characteristics

2 = 0-5 and 1-9 VDC Voltage Input
8 = 4-20 and 10-50 mA DC Milliampere Input
9 = Special Input - Customer to specify input required (Consult Factory)
NOTE: 1. See position 7 for input range coding

7 Electrical Inputs

E = 4-20 mA DC
F = 10-50 mA DC
H = 0-5 VDC
J = 1-9 VDC
Y = Special Input (Consult Factory)

8 Accessories

A = GFH60XTKEG1C 0-25 PSI (0-172 kPa) Airpak®-Filter Regulator w/Gauge (Note 1)
B = GFH60XTKEG1F 0-60 PSI (0-414 kPa) Airpak®-Filter Regulator w/Gauge (Note 2)
C = GFX04 Filter only - No Regulation Desired
D = No Filter-Regulator or Filter Desired
E = GFH60XTKEX1C 0-25 PSI (0-172 kPa) Airpak®-Filter Regulator w/o Gauge (Note 1)
F = GFH60XTKEX1F 0-60 PSI (0-414 kPa) Airpak®-Filter Regulator w/o Gauge (Note 2)
NOTES:
1. For use with 3-15 PSI (21-103 kPa) Output (12 PSI (83 kPa) Span)
2. For use with 3-27 and 6-30 PSI (21-186 and 1-207 kPa) Outputs (24 PSI (166 kPa) Span)
3. For catalog number make-up of accessories, refer to applicable sales literature.

9 Mounting Accessories

A = 2" U-Clamp for Pipe Mounting
X = Standard - Unless Option Code is Specified

10 Operation Modes

A = Factory Mutual Approved - Intrinsically Safe
X = Standard - Unless Option Code is Specified

11 Housings

X = Standard - Unless option code is specified (Note 1)
M = Metal Cover having no Top Access Cover (Note 2)
NOTES:
1. This cover is used when electrical connection is made directly to the internal terminal block.
2. This cover is used when electrical connection is made to 2-Leads 20" Long - #18GA. Wire/1 Positive (Red) - 1 Negative (Black)
3. For dimensional data, refer to drawing:
A28-45 = Metal Cover with Top Access Cover
A28-46 = Metal Cover with 20" Leads

12 Special Range (input)

1. When option "Y" in position 7 is used, the factory will apply four digit code defining the product selection.