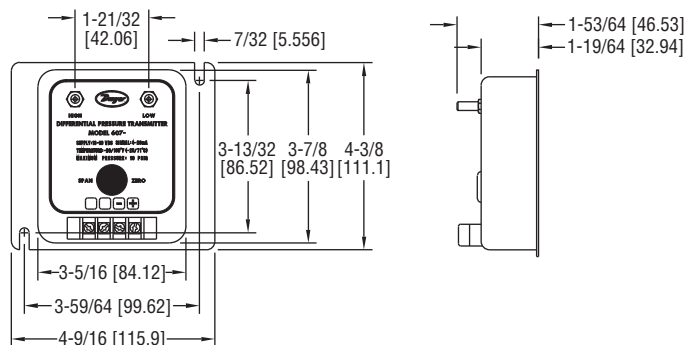




## Series 607 Differential Pressure Transmitter

### Specifications - Installation and Operating Instructions



The Dwyer Series 607 Differential Pressure Transmitter converts positive, negative (vacuum) or differential pressures of clean, dry air or other non-conductive, non-corrosive gases into a standard two wire, 4-20 mA output signal. Several factory calibrated models are available with ranges from 0-.10" w.c. to 0-25" w.c. All models employ a variable capacitance transducer with a micro-machined, ultra thin silicon diaphragm enabling precision measurement and control of very low pressures. Because no epoxies or other organics are used to seal the sensor, performance is exceptionally stable and drift free. It is also highly resistant to overpressure, shock and vibration. See specifications for complete details.

#### Series 607 Transmitter Models & Ranges

##### Accuracy $\pm 0.5\%$ of Full Scale\*

Model	Range in w.c.	Model	Range in w.c.
607-0	0-.10	607-9	0-25
607-1	0-.25	607-0B	.10-0-.10
607-2	0-.50	607-1B	.25-0-.25
607-3	0-1.0	607-2B	.50-0-.50
607-4	0-2.0	607-3B	1.0-0-1.0
607-7	0-5.0	607-4B	2.0-0-2.0
607-8	0-10	607-7B	5.0-0-5.0

##### Accuracy $\pm 0.25\%$ of Full Scale\*

Model	Range in w.c.	Model	Range in w.c.
607-01	0-.10	607-21	0-.50
607-11	0-.25	607-71	0-5.0

\*Includes Linearity, Hysteresis, and Repeatability

#### SPECIFICATIONS

##### GENERAL

**Maximum Pressure:** 10 psig (0.69 bar).

**Media Compatibility:** Air and non-conductive, non-corrosive gases.

##### ELECTRICAL

**Power Supply:** 12-36 VDC, unregulated.

**Output Signal:** 4-20 mA DC, two wire.

**Loop Resistance:** 0-1045 ohms  $V_{min.} = 12V + [(0.022A)(RL)]$ .

**Warm-up Time:** 15 seconds.

##### PERFORMANCE AT 70° F.

**Output at zero:** 4 mA.

**Output at full span:** 20 mA.

**Stability:**  $\pm 0.5\%$  of full span/year.

**Response Time:** 250 msec.

##### TEMPERATURE LIMITS

**Operating:** -20 to 160°F (-29 to 71°C), 10-95% RH, non-condensing.

**Compensated:** 35 to 135°F (2 to 57°C).

**Storage:** -40 to 180°F (-40 to 82°F).

**Thermal Effects:**  $\pm 0.015\%$  F.S./°F (zero and span).

##### MECHANICAL

**Housing:** 300 Series stainless steel (NEMA 2).

**Pressure Connections:** 4" barbed stainless steel for 3/16" ID tubing.

**Weight:** 1.04 lb (472 g).

**Span and Zero:** Factory set to specified range. Externally accessible, non-interactive,  $\pm 10\%$  F.S. adjustment.

## INSTALLATION

1. Location: Select a clean, dry location free of excess vibration where the temperature of the unit will be between -20 and 160°F. Distance from the receiver is limited only by total loop resistance. See "Electrical Connections". The tubing supplying pressure to the transmitter can be run practically any distance. Long tubing lengths will not affect accuracy but response time will be increased slightly.

2. Position: The Series 607 Transmitter is not position sensitive. However, it is recommended that you avoid mounting with pressure connections pointing up because of the chance of condensed moisture entering the interior. Moisture can also be avoided by routing tubing with a low point just ahead of the transmitter.

3. Mounting: Attach to mounting surface with two #8 or #10 screws in the mounting slots provided.

4. Pressure connections: The Series 607 Transmitter is shipped with a short length of tubing installed between the ports to keep the interior clean. Remove it and discard after unit is mounted. Connect positive (above atmospheric) pressure to port marked "HIGH" and vent the "LOW" port. Connect negative (vacuum) pressure to port marked "LOW" and vent the "HIGH" port. For differential pressures, connect the higher one to the "HIGH" port and the lower one to the "LOW" port.

## ELECTRICAL CONNECTION

Caution: Do not exceed the specified supply voltage rating. Permanent damage, not covered by warranty, may result. This unit is not designed for AC voltage operation.

Electrical connections to the Series 607 Transmitter are made to the two screws on the terminal strip labeled + and -. If polarity is inadvertently reversed, the loop will not function properly but no damage will be done to the transmitter because of internal circuit protection. An external power supply delivering 12 to 36 VDC must be used to power the control loop in which the transmitter is connected. Refer to Figure B for connection of the power supply, transmitter and receiver. The power required to generate the 4-20 mA output signal depends on the loop resistance of the circuit and is proportional to the resistance according to the graph and formula in Figure C. The maximum length that can be used in the current loop is a function of wire size and receiver resistance. A shielded two conductor cable is recommended for control loop wiring. Make sure the total loop resistance is within the operating range as shown in Figure C.

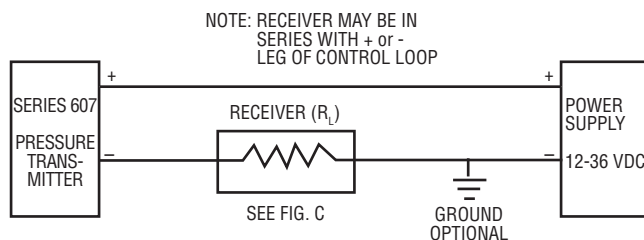


Figure B

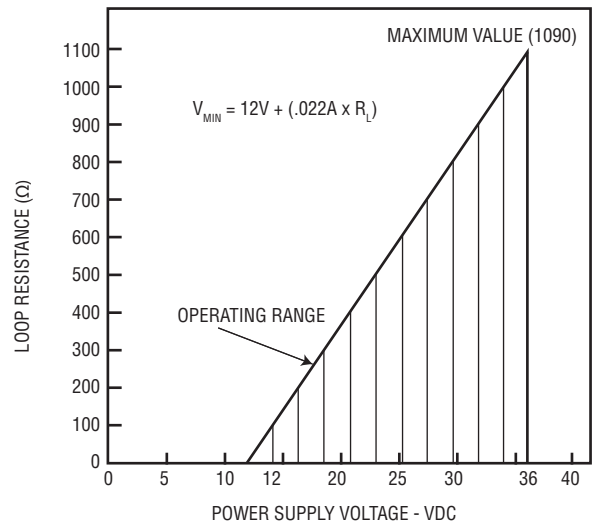


Figure C

## CALIBRATION

Each Series 607 Transmitter is factory calibrated to the range listed in the model number chart. Range is defined as that pressure which when applied to the transmitter will produce a 20 milliamp current in the loop. Zero pressure will produce 4 milliamps. If fine adjustment of calibration is required, used the following procedure:

- 1). With the transmitter connected to its' companion receiver, insert a milliammeter in series with the current loop. A controllable pressure source should be teed to the high pressure port of the transmitter and to an accurate pressure gage or manometer.
- 2). Apply electrical power to the system and allow 15 seconds for components to stabilize.
- 3). With no pressure applied to the transmitter remove blowout disc and adjust "zero" control so loop current is 4 mA.
- 4). Apply full span pressure and adjust loop current to 20 mA using "span" control.
- 5). Remove the milliammeter from the circuit, replace blowout disc, and place system in service.

## MAINTENANCE/REPAIR

After final installation of the Series 607 Differential Pressure Transmitter, no routine maintenance is required. A periodic check of system calibration is recommended. These devices are not field repairable and should be returned to the factory if recalibration or other service is required. After first obtaining a Returned Goods Authorization (RGA) number, send the material, freight prepaid, to the following address. Please include a clear description of the problem plus any application information available.

Dwyer Instruments, Inc.  
Attn: Repair Department  
102 Highway 212  
Michigan City, IN 46360.