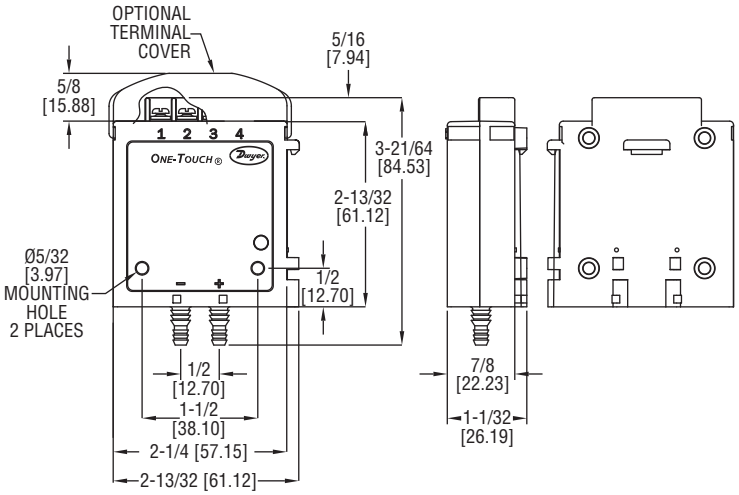
Series 616KD Differential Pressure Transmitter

Specifications – Installation and Operating Instructions



The Series 616KD One-Touch® Differential Pressure Transmitter senses the pressure of air and compatible gases and sends a standard 4 to 20 mA or optional voltage output signal. A wide range of models are available factory calibrated to specific ranges. A single push button properly adjusts both zero and span. New enclosure enables the 616KD to be mounted on a 35 mm DIN rail either via its side or back DIN rail clips.

INSTALLATION

Select a clean, dry mounting location free from excess vibration. Distance from the receiver is limited only by total loop resistance. See Electrical Connections below. The tubing supplying pressure to the instrument can be practically any length required, but long lengths will increase response time slightly.

Pressure Connections

Two integral barbed tubing connections are provided. They are dual-sized to fit both 1/8″ and 3/16″ (3.12 and 4.76 mm) ID tubing. Be sure the pressure rating of the tubing exceeds that of the operating ranges.

ELECTRICAL CONNECTIONS

⚠ CAUTION Do not exceed specified supply voltage ratings. Permanent damage not covered by warranty will result. This unit is not designed for 120 or 240 volts AC line operation.

Shielding cabling is required. Cable shield must be attached to a reliable earth ground. Electrical connections are made to the terminal block located on the top of the transmitter. Terminals are marked 1, 2, 3, 4. Determine which of the following circuit drawings applies to your application and wire accordingly.

Wire Length

The maximum length of wire connecting transmitter and receiver is a function of wire size and receiver resistance. Wiring should not contribute more than 10% of the receiver resistance to total loop resistance.

SPECIFICATIONS

Service: Air and non-combustible, compatible gases.
Wetted Materials: Consult factory.
Accuracy: ±2.0% FS.
Stability: ±1% FS/yr.
Temperature Limits: 32 to 122°F (0 to 50°C).
Pressure Limits: 2 psi (13.8 kPa).
Thermal Effect on Span: ±0.11% FS/°F (±0.19% FS/°C) typ.
Thermal Effect on Zero: 616KD-X0: 0.6%/°F (1%/°C); 616KD-X1: 0.3%/°F (0.5%/°C); 616KD-X2: 0.2%/°F (0.33%/°C); 616KD-X3: 0.12%/°F (0.2%/°C); 616KD-X4: 0.06%/°F (0.1%/°C) FS max.
Power Requirements: 16 to 36 VDC (2 or 3 wire); 20 to 28 VAC (3 wire).
Output Signal: 4 to 20 mA or unit with field selectable 0 to 10 & 0 to 5 volt.
Zero and Span Adjustments: Push button.
Loop Resistance: DC: 1000 Ω max.; AC: 1200 Ω max.
Current Consumption: 21 mA max.
Warm Up Time: 30 minutes.
Electrical Connections: Screw-type terminal block.
Process Connections: Barbed, dual size to fit 1/8″ & 3/16″ (3 mm & 5 mm) ID rubber or vinyl tubing.
Enclosure Rating: NEMA 1 (IP20).
Mounting Orientation: Position insensitive.
Weight: 1.8 oz (51 g).
Agency Approvals: CE.
Tested to the following standards:
IEC 61000-4-2: 2008
IEC 61000-4-3: 2006
IEC 61000-4-4: 2004
IEC 61000-4-5: 2005
IEC 61000-4-6: 2006
CENELEC EN 61000-6-2: 2005
CENELEC EN 61000-6-4: 2007
CENELEC EN 55011: 2007
FCC Part 15 CFR Title 47: 2009
ICES-003: 2004 Digital Apparatus (Industry Canada)
ANSI C63.4-2003: 2003
CENELEC EN 61326-1: 2006
2004/108/EC EMC Directive

Voltage Units (0 to 5 or 0 to 10 V)
An external power supply delivering 16 to 35 VDC or 20 to 28 VAC with minimum current capability of 16 mA DC (per transmitter) must be used to power the control loop. Connect terminals 3 & 4 to select the 0 to 5 V output mode. Leave terminal 4 disconnected to select the 0 to 10 V output mode.

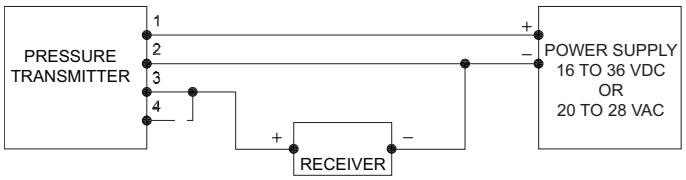


Figure A

See Figure A for connection of the power supply, transmitter and receiver.

2-Wire Operation (4 to 20 mA units)
An external power supply delivering 16 to 35 VDC with minimum current capability of 21 mA DC (per transmitter) must be used to power the control loop. See Figure B for connection of the power supply, transmitter and receiver. The range of appropriate receiver load resistance (RL) for the DC power supply voltage available is expressed by the formula and graph in

2 - WIRE CONNECTIONS (4 TO 20 mA)

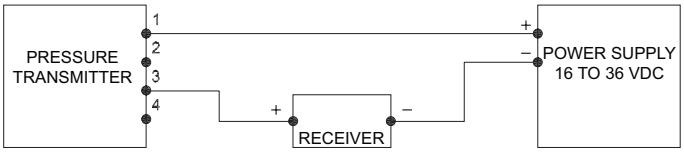


Figure B

Figure D.

3-Wire Operation (4 to 20 mA Units)
An external power supply with minimum current capability of 21 mA DC (per transmitter) delivering 16 to 35 VDC or 20 to 28 VAC is required. See Figure C for connection of power supply, transmitter and receiver. The range of appropriate receiver load resistance (RL) of DC and AC power

3 - WIRE CONNECTIONS (4 TO 20 mA)

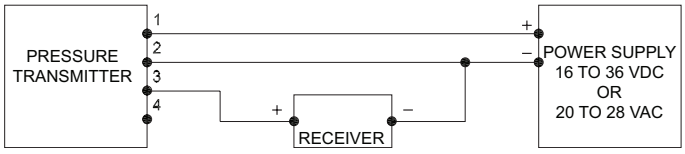


Figure C

supplies is expressed by the formula and graph in Figures D & E.

Zero Adjustment
Allow transmitter to warm up for 30 minutes. Transmitter should be zeroed at the temperature it is to be operated at.
A single push button is provided to zero the transmitter. Span is factory calibrated to the range specified on the label. There is no user span adjustment necessary.

MAINTENANCE/REPAIR
Upon final installation of the Series 616KD no routine maintenance is required. The Series 616KD is not field serviceable and should be returned if repair is needed. Field repair should not be attempted and may void warranty.

WARRANTY/RETURN
Refer to "Terms and Conditions of Sales" in our catalog and on our website. Contact customer service to receive a Return Goods Authorization number before shipping the product back for repair. Be sure to include a brief description of the problem plus any additional application notes.

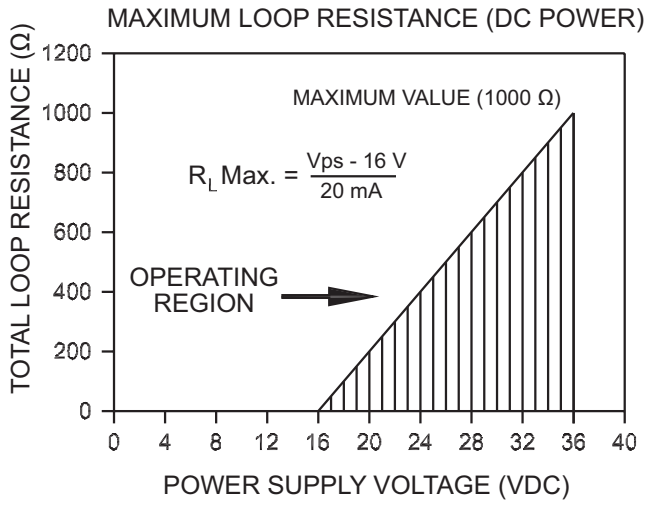


Figure D

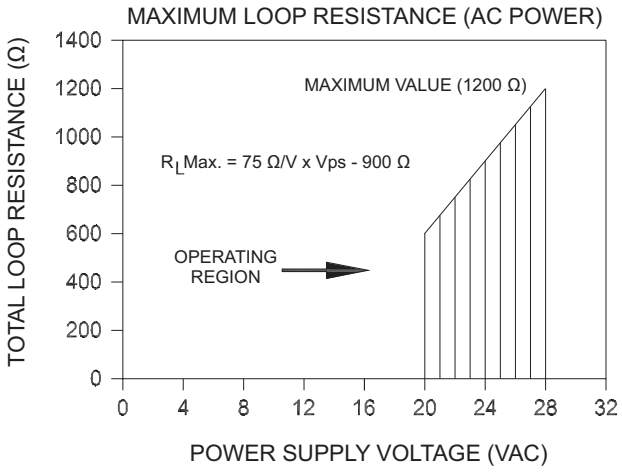


Figure E

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