

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

DR800

Draft Range Pressure Transmitter



Features

- ☐ **Full Range as low as 0.25" H_2O without Turndown or Amplification**
- ☐ **Low Ambient Temperature Effects Improve Very Low Measurements**
- ☐ **Selectable Resolution on Zero and Span Adjustments Ease Critical Calibrations**
- ☐ **Integral 3½ Digit Liquid Crystal Display Available**
- ☐ **Field Repairable**

Description

The Validyne Model DR800 Draft Range Transmitter is designed exclusively for very low pressure measurement needs. It has a "true" full-scale range as low as ±0.25" H_2O, making it ideal for air flow control applications. It can be turned down to ±0.1" H_2O; higher full-scale ranges to ±100" H_2O are available. The DR800 offers 0.5% accuracy and an operating temperature range of -20°F to +185°F. The total combined temperature effects are less than 3%/100°F.

The model DR800 has many outstanding features which make it the perfect transmitter for very low pressure measurements.

Zero and Span Adjustments

Validyne has simplified the zero and span adjustments. The Model DR800 uses a programmable circuit board jumper in conjunction with a 20-turn potentiometer to achieve a smooth, accurate zero adjustment. Using the pot/jumper combination, ranges can be selected from –100% zero elevation to +85% zero suppression (see Fig. 1). Also, the span adjust has a HI and LO gain jumper to allow better full-scale setpoint resolution. This achieves more turns from the potentiometer over a smaller percentage of the span and zero adjust range making critical setpoint calibrations easier and less time consuming.

Construction

The Model DR800 conforms to typical industrial standards:

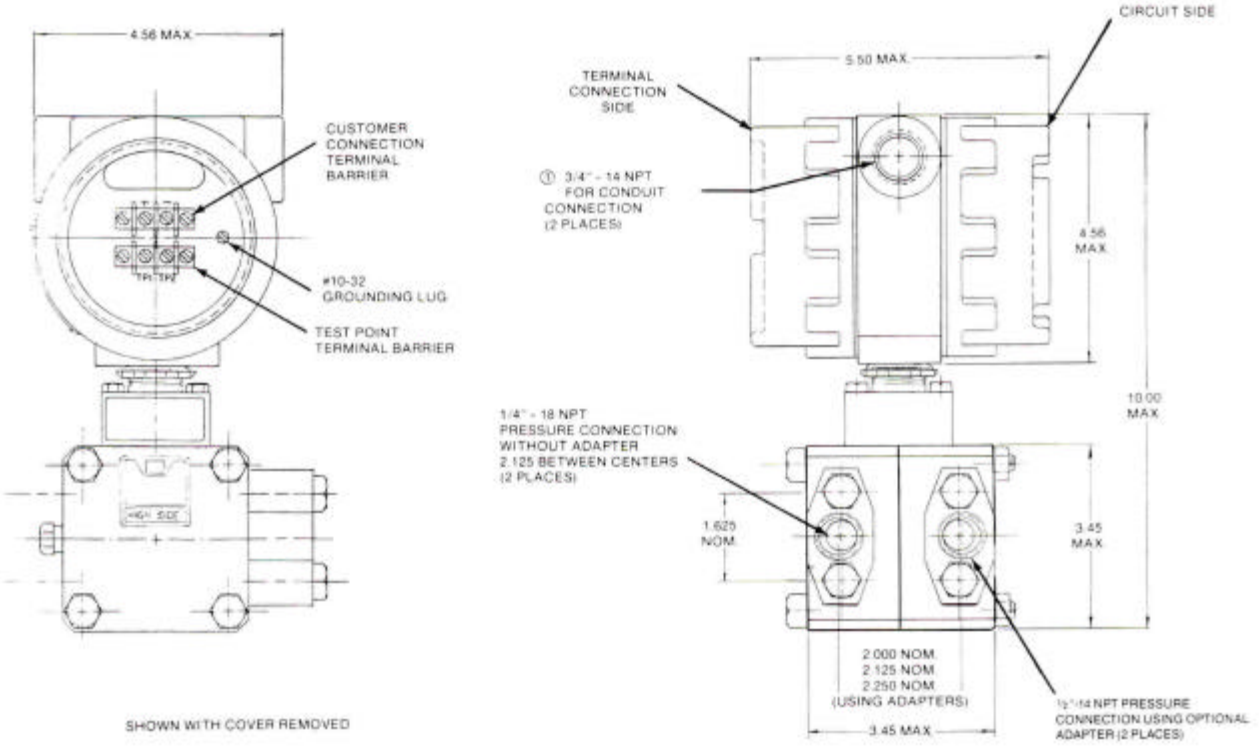
- Gasketed, threaded covers on the electrical enclosures (NEMA 4 enclosure).
- Dual electrical cavities in the electrical housing keep field wiring separate from the electrical compartment.
- ¼" NPT female pressure connections on 2.125" centers, and optional 0.5" NPT adapters, adjustable to 2", 2.125", or 2.25" centers make manifold mounting possible.
- Pressure connections on front and rear simplify field installation, allow easy access to drain plugs, and add flexibility to the installation of transducer on mounting bracket.
- Sensor body and wetted parts made from 410 SST for improved corrosion resistance over carbon steel.

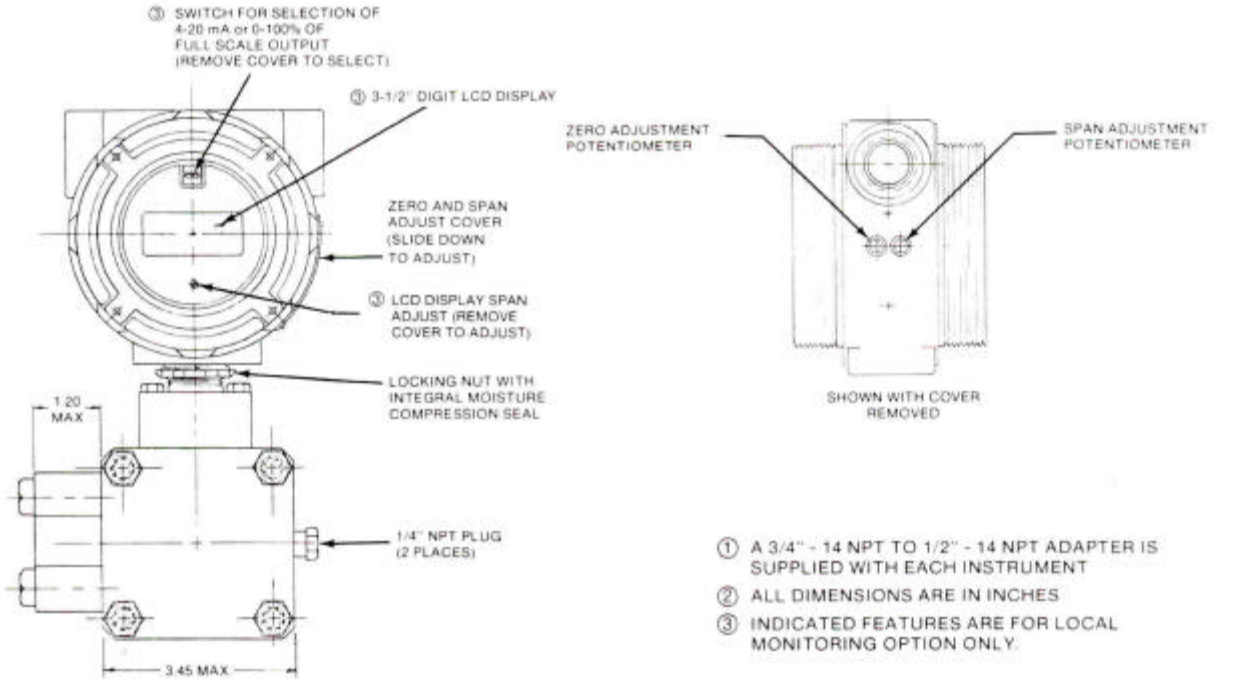
Electrical

The DR800 is a "true" two-wire system (power and signal) with a standard output of 4-20mA (see Fig. 3). Other features include:

- Wide power input range of 12 to 45Vdc (see Fig. 2, Load Chart).
- Reverse polarity and short circuit protection.
- Selectable damping smoothes noisy output: user selectable time constant from 0.25 to 8 seconds.
- Conformally coated PC board extends survival rate in harsh environments.
- Loop powered LCD meter (local indicator) is available. The meter mounting is rotatable, making installation more flexible.
- External zero and span adjustment potentiometers are tamper-proof by use of a cover plate.

Dimensional Drawings





① A 3/4" - 14 NPT TO 1/2" - 14 NPT ADAPTER IS SUPPLIED WITH EACH INSTRUMENT

② ALL DIMENSIONS ARE IN INCHES

③ INDICATED FEATURES ARE FOR LOCAL MONITORING OPTION ONLY.

Functional Specifications

Type: Differential

Pressure Media: Media compatible with 410 SS

Differential Ranges:

Turndown Range	Full Range	Max. Temp. Error
0.1" H_2O	0.25" H_2O	0.0075" H_2O100°F
0.2" H_2O	0.50" H_2O	0.015" H_2O100°F
0.4" H_2O	1.0" H_2O	0.03" H_2O100°F
1.0" H_2O	2.5" H_2O	0.075" H_2O100°F
2.0" H_2O	5.0" H_2O	0.15" H_2O100°F
4.0" H_2O	10.0" H_2O	0.30" H_2O100°F
10" H_2O	25" H_2O	0.75" H_2O100°F
20" H_2O	50" H_2O	1.5" H_2O100°F
40" H_2O	100" H_2O	3.0" H_2O100°F

Power Supply: Two-wire configuration, 12-45 Vdc; external supply required.

Load Rating: See Figure 2.

Indication: Optional 3½ digit liquid crystal display (LCD) independently selectable for readout in percent of full-scale or mA units.

Zero Adjust: Continuously adjustable 20-turn external zero pot. Works in combination with circuit board jumper to provide a zero setpoint from –100% to +85% of full-scale (See Figure 1).

Span Adjust: Continuously adjustable 20-turn external span pot provides turn-down ratios up to 2.5:1. Works in combination with circuit board jumper for bipolar applications.

Temperature Effects: 3%/100°F combined zero and span, -20°F to +185°F

Humidity: 0-100% relative humidity

Overpressure Limits: ±5 psi (with less than 5% FS Zero Shift)

Max. Line Pressure: 100 psi 10" and below; 2000 psi above 10".

Line Pressure Coefficient: 10" H_2O FS and below, 1% FS or less per 100 psi; above 10" H_2O FS, 1% FS or less per 400 psi (typical).

Performance Specifications

Accuracy: 0.5% or better, including non-linearity, hysteresis, non-repeatability, and dead band.

Stability: ±0.5% Full-Scale over 6 months.

Damping: Time constant selectable from ¼ to 8 seconds.

Signal Output: 4-20 A (true two-wire system).

Circuit Protection: Reverse polarity, short-circuit proof.

Physical Specifications

Pressure Connections: Industry standard (¼ " NPT ports on 2 " centers) machined for pressure adapters. Optional adapters provide ½ " NPT ports on adjustable centers of 2", 2 ", or 2¼ ".

Mounting: Bracket available for 2" pipe.

Electrical Connections: Terminal barrier strip for field wiring and test points.

Electrical Enclosure: NEMA 4 with Neoprene gasket and threaded covers.

Weight: 16 lbs., maximum.

O-rings: Available with BUNA-N (std.), Ethylene Propylene, Viton-A, or Silicone.

Corrosion Capability: Media compatible with 410 SST, Inconel, 316 SST and selected O-ring material.

Options and accessories: 3½ Digit LCD reading % of full-scale or mA (switch selectable). ½ second update rate.

Mounting kit for 2½ " pipe P/N 12059, ½ " NPT Adapters

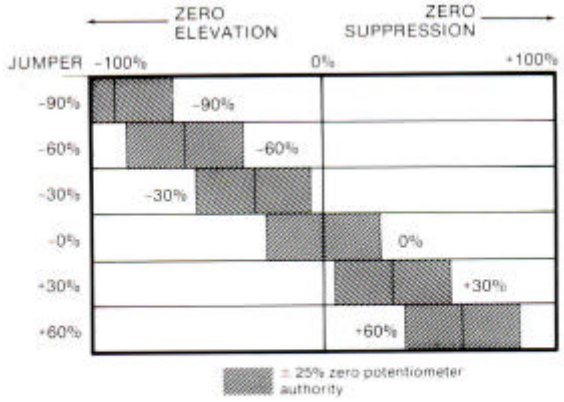
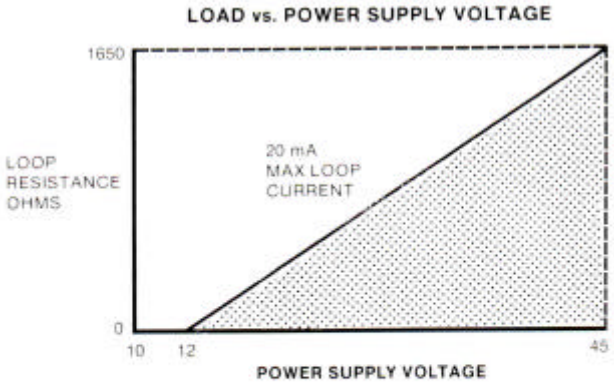


Figure 1 — Zero Adjust Range Chart



$V_{PS} = 1.02 R_T + 12$

Where: V_{PS} = Min. Req'd. Power Supply Voltage
R_T = Total Loop Resistance
.02 = Full Scale Current, Amps
12 = Min. Power Supply Required, Volts

Figure 2 — Loading Chart

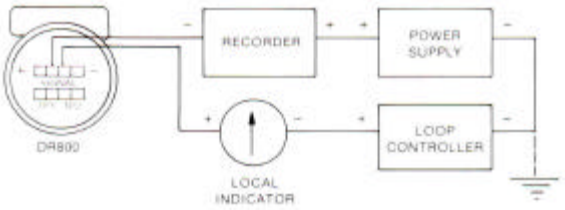


Figure 3 — Wiring Connections

Field Repair

The DR800 has been designed for easy field repair if required. All the electronics are housed in the NEMA housing on top of the transducer and joined to the transducer through a single plug in the neck of the transmitter. The entire electronics housing can be removed and replaced in a matter of minutes without removing the transducer from its mounting. The electronic circuit board is also field repairable; no special tools are required.

Ordering Information

To order the Model DR800 Draft Range Transmitter,
Specify the part number as indicated in the chart below.

DR800D – XXX – N – 1 – A – 4 - A

Differential

Full-Range

± P25, P50, 1P0, 2P5, 5P0,
10P, 25P, 50P, ICO
(in H_2O, P indicates decimal point, C is 100)

O-Rings

N =BUNA-N (std.)
E =Ethylene Propylene
V = Viton-A
S = Silicone

Output

1 = 4-20mA (std) = 0, +FS
2 = 4-12-20mA = -FS, 0, +FS
3 = Customer Specified

Display

A = None
B = 3½ digit LCD

Certification

4 = Standard Industrial

Fittings

A = No ½" NPT Adapters
B = With ½" NPT Adapters

Specifications are subject to change without notice.

VALIDYNE ENGINEERING

8626 Wilbur Avenue Northridge, CA 91324-4498
(818) 886-2057 FAX (818) 886-6512
http://www.validyne.com e-mail to sales@validyne.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP