

Dresser Products and Services

Ohio Gas Association 2012 Technical Seminar

March 29, 2012
Columbus, Ohio



imagination at work

New Products and Value Added Solutions

Dresser D800

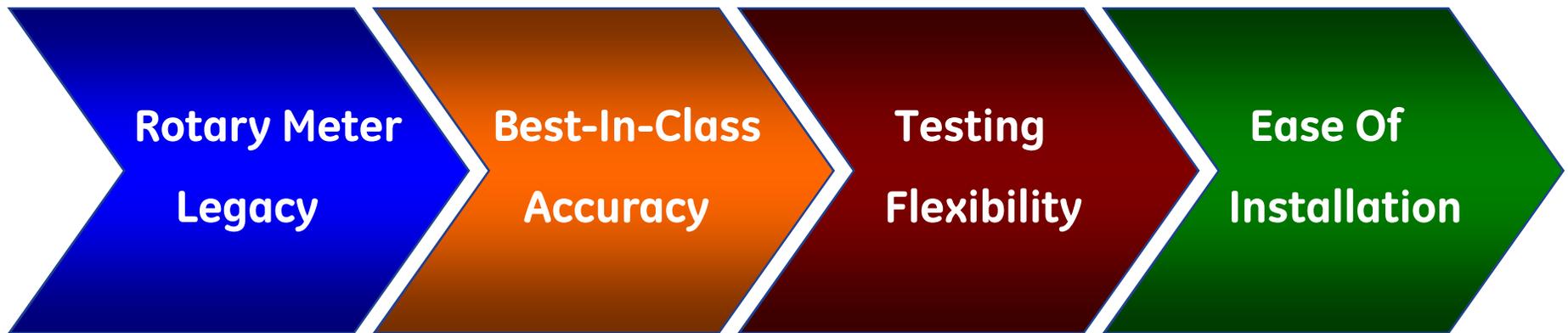
Diaphragm Replacement Meter



imagination at work

Introducing the Dresser D800 Diaphragm Replacement Meter

New Solution ...



... Proven Technology

Customer Driven Design

- Often repeated request for rotary meter replacement for commercial diaphragms
- Numerous customer interviews
- Multiple iterations to incorporate customer suggestions



New Solution... Proven Technology



Direct mount to 800 Class
diaphragm sets

Compact Design

Oil Free

Electronic Temperature
Compensation

Lithium Battery with an average
20 Year Life

AMR Mounting

25 PSIG MAOP

Specifically Designed to Replace 800 Class Diaphragm Meters

Matching capacity



Matching connections



Matching testing



No oil



... and the additional attributes of sustained long term accuracy, reduced size/weight, and advanced electronics.

D800 Meter Electronics

- Electronic Temperature Compensation
- Pulse output: 2 Form A and 1 Form B
 - Form A Pulse Outputs fully programmable
- Logging Capabilities
 - 150 Days of Hourly Data
 - Comp and Non-Comp Volume
 - Line Temperature
 - Battery Voltage
 - ... and more

Communication via IR interface



**Field Testing with
600 Class Diaphragm**

Compact Size with Familiar Connections



Field Testing with 800 Class Diaphragm

- Installation by one person vs. two person crew...
 - 70% Volume Reduction vs. 800 Class Diaphragm
 - 50% Weight Reduction vs. 800 Class Diaphragm
- No need to change the meter set piping....
 - 45 LT, 30 LT and #5 Sprague Connections
 - 11" Center-to-Center Distance - Same as 800 Class Diaphragm

Average 20 Year Battery Life

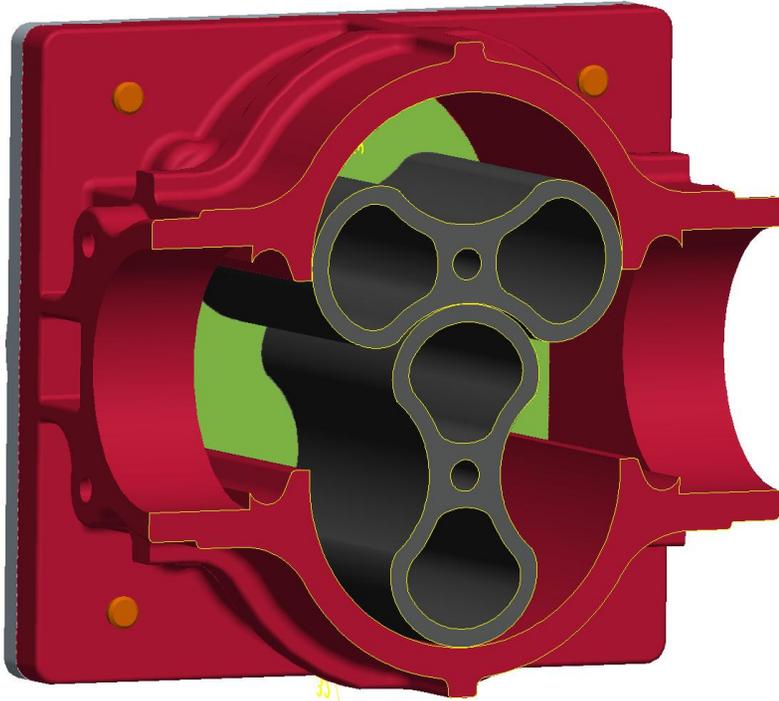
Calculated battery life based on continuous flow of 800 acfh.

Temperature affects battery life

- Cooler climates: 20+ years
- Warmer climates: 15+ years



Meter Performance



- Meter Capacity (air)
 - 800 CFH @ 0.5" w.c.
 - 1700 CFH @ 2.0" w.c.
- Excellent Start Rates
- Typical Rotary Curve
 - Extremely rapid rise from start
 - Level performance across operating range
- Non-Adjustable, Machined in, Permanent Accuracy that you have come to expect from a rotary meter!

Meter Performance

- Rangeability +/- 1% at $Q_{max} = 800$ acfh is 100:1
- Rangeability +/- 1% at $Q_{max} = 1700$ acfh is 212:1
- Rangeability +/- 2% at $Q_{max} = 800$ acfh is 160:1
- Rangeability +/- 2% at $Q_{max} = 1700$ acfh is 340:1
- Start Rate cfh 0.30 m³/h 0.0085
- Stop Rate cfh 0.15 m³/h 0.0042

AMR Capabilities

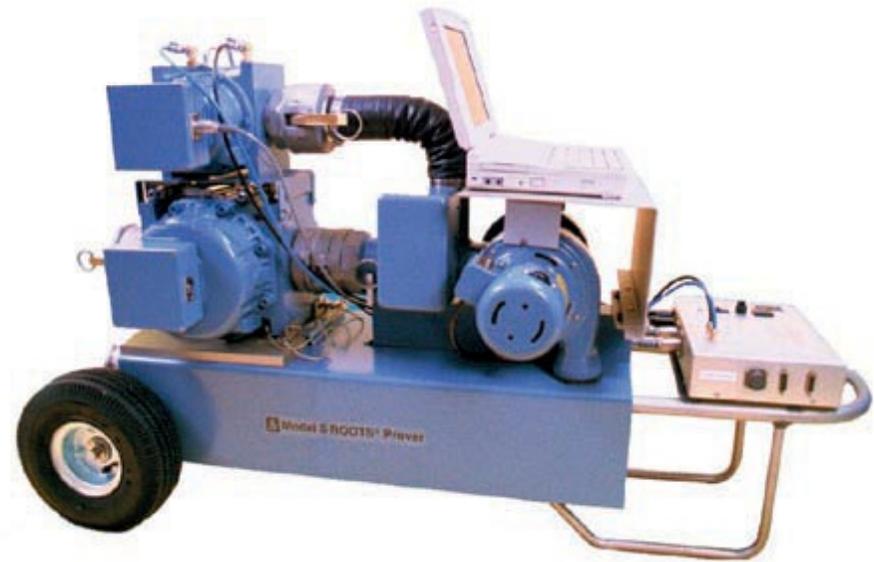
- Wiring diagram available on AMR mounting plate
 - Eliminates searching for wiring information in the field!
- D800 AMR pulse output wires completely concealed
 - Valuable feature in areas where vandalism is an issue!
- 2 Form A and 1 Form B pulse outputs available.



Testing Flexibility in the Shop and Field

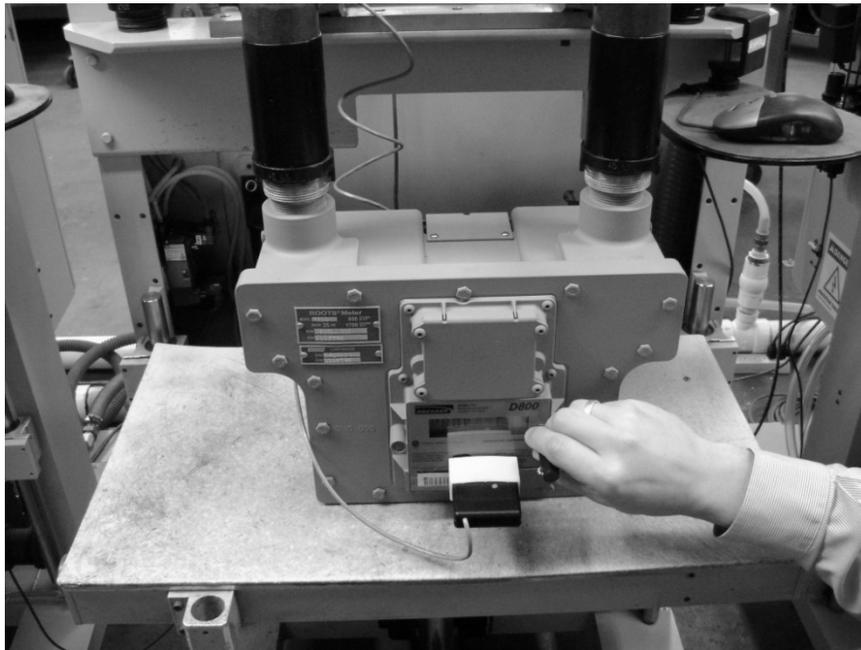
Sonic Nozzle Provers

Dresser Model 5 Prover



Sonic Nozzle Prover Compatibility

“One Cable” IR interface allows for rapid proving of D800 on the following test benches:



- SNAP II, III and MMX
- Measurement Systems (pending)
- No-Bell (pending)
- Energy Economics (pending)

Specs and Certifications

- CSA : Class 1, Div 1, Group A, B, C and D Certification
- Meets internationally recognized standards for moisture ingress protection (IP 65 and IP 66)
- Electromagnetic Compliance per IEC standards
- Electrostatic Discharge Compliance per IEC Standards

Temperature Accuracy

- -40 to 32 °F: +/- 0.4 °F and from +32 to 140°F: +/- 0.5°F

Warranty

- D800 Meter – 2 years
- Battery – 12 years

ES3

Electronic TC with Series 3 Mechanical Backup



The ES3 is...

...an accurate electronic temperature compensating index with the security of a proven mechanical back-up.



ES3 Versions

- ES3 Electronic TC and S3 Mechanical Index - 8C-16M Series B Dresser meters
- ES3 Electronic TC and S3 Mechanical Index, with AMR Bracket (Itron) – 8C-16M Series B Dresser meters
- Same options soon to be available for 1.5M-16M Dresser LMMA meters



Electronic Temperature Compensation

- 20 Year Average Battery Life
- IrDA (Infra Red) communications interface (same as the D800)
 - Configuration (User Terminal)
 - Fast Model 5 Prover Testing
 - Firmware upgrades can be done by using the MeterWare software

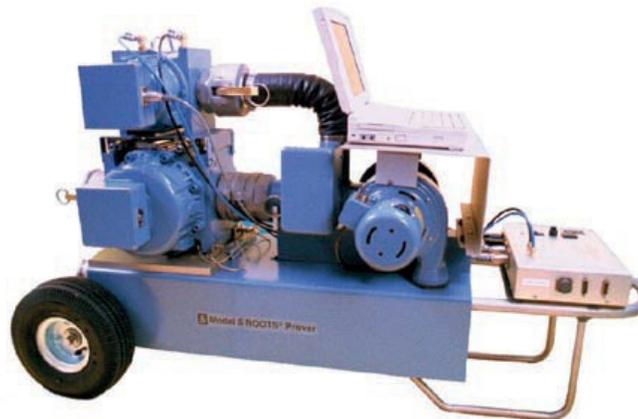
Three pulse outputs

- Two Form A Configurable to compensated, non-compensated, or alarm
- One Form B – Alarm (AMR version)
- Fixed Factor Pressure
- Extensive logging capability - 150 days of hourly data
- Configurable at Factory – Dresser offers an “out of the box” solution!
 - Custom configuration and ERT mounting/programming at factory

Testing the ES3

Testing the ES3 via the ROOTS® Model 5 Prover

- Same prover software you have become familiar with
- One cable to Field Junction Box
- Fast proving
- Directly supported by factory
- Preconfigured Test Files supplied for ES3 meters



Warranty Policy

Two components:

1. Index

- 4 years
- Everything other than battery

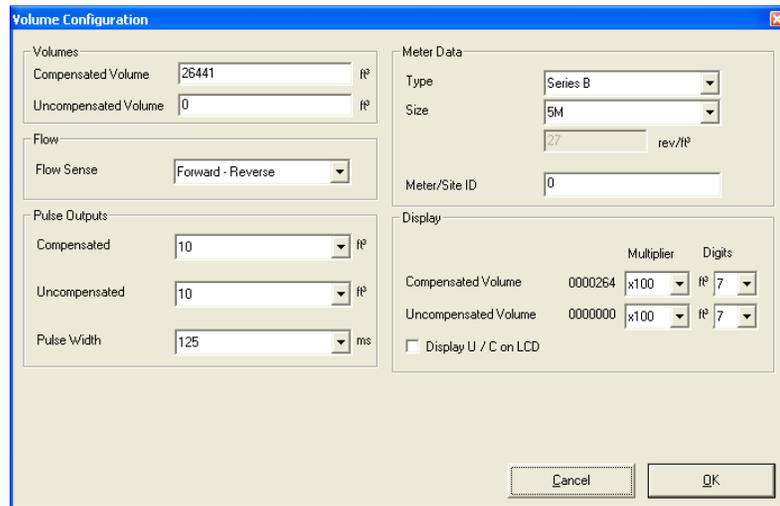
2. Battery

- Limited 12 year warranty

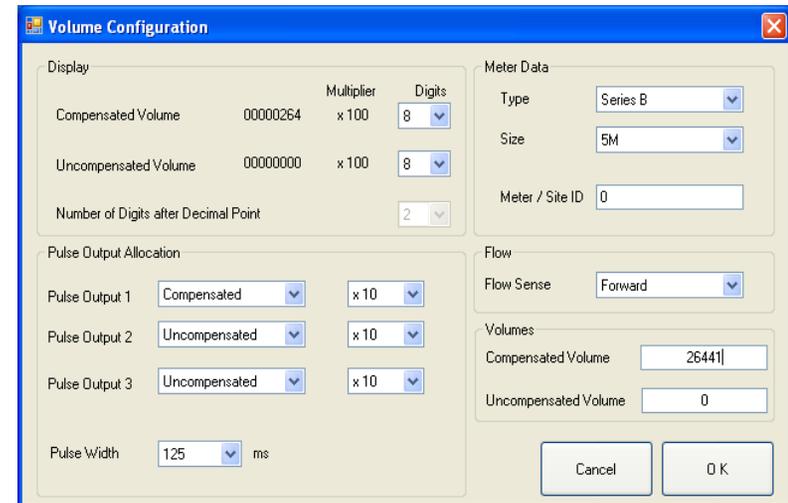


User Friendly MeterWare Software

Provides same look and feel as the Dresser Micro Corrector User Terminal many customers have become accustomed to!



Micro Corrector User Terminal

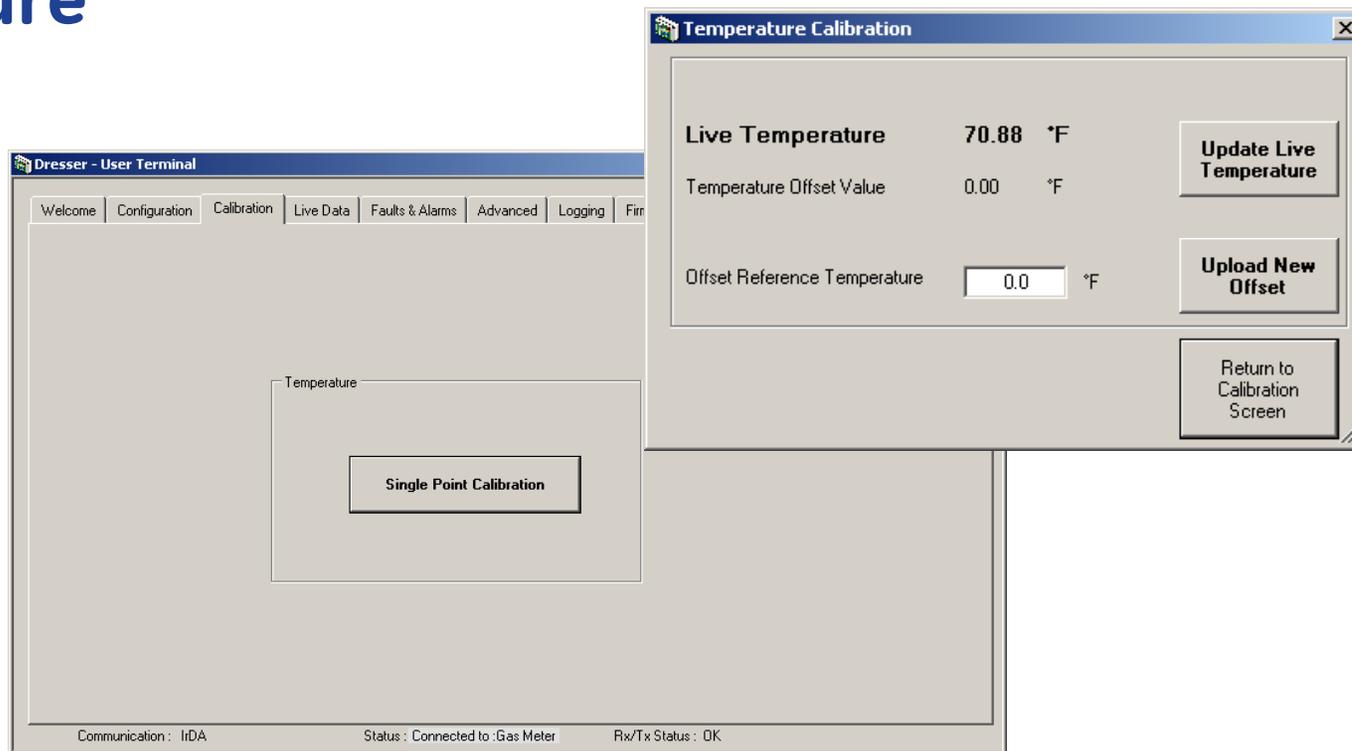


D800 and ES3 User Terminal Software

- User friendly layout
- Intuitive inputs
- Same software for ES3 and D800

Simple Temperature Calibration

A single point temperature calibration is conducted via the MeterWare software



ES3 and D800 Data Security

Accessibility of stored data

- On ES3 - Mechanical or electronic data
- Electronic data stored in non-volatile memory
 - Retains data and unit configuration without power



Dresser Repair/Remanufacturing Services

Dresser offers a complete range of repair services for both mechanical and electronic Dresser products.

- Authentic Dresser parts
- Certified and experienced factory technicians
- Fast turnaround times when repair orders are scheduled in advance
- New 1 year standard warranty on qualifying repairs.
- Experienced Sales Support Specialists to provide you with the same excellent customer service you receive on new meter orders!

