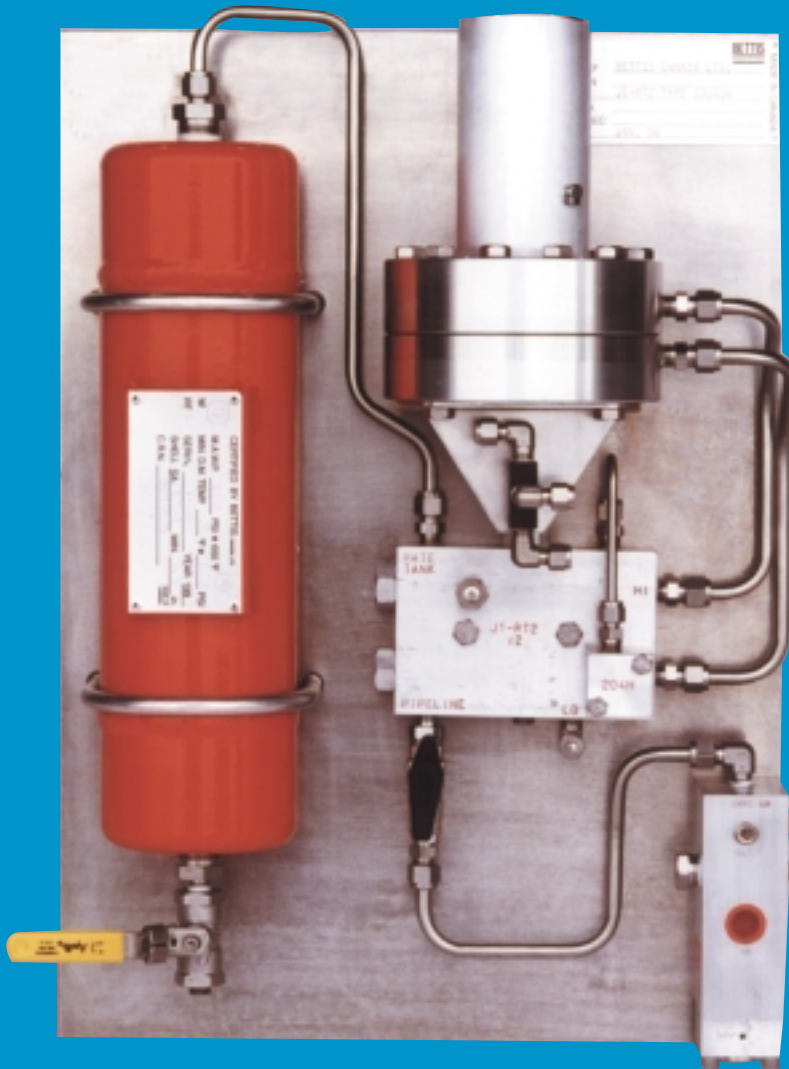


Pipeline Pressure Operated
Selective Shutdown Capability
Compact System



Adaptable to Existing System
Field Adjustable
Withstands Harsh Environment

BETTIS®

**DeltaMatic™
Rate of Drop
Linebreak
Detection
System**


EMERSON™
Process Management

EMERSON. CONSIDER IT SOLVED.™

General Description

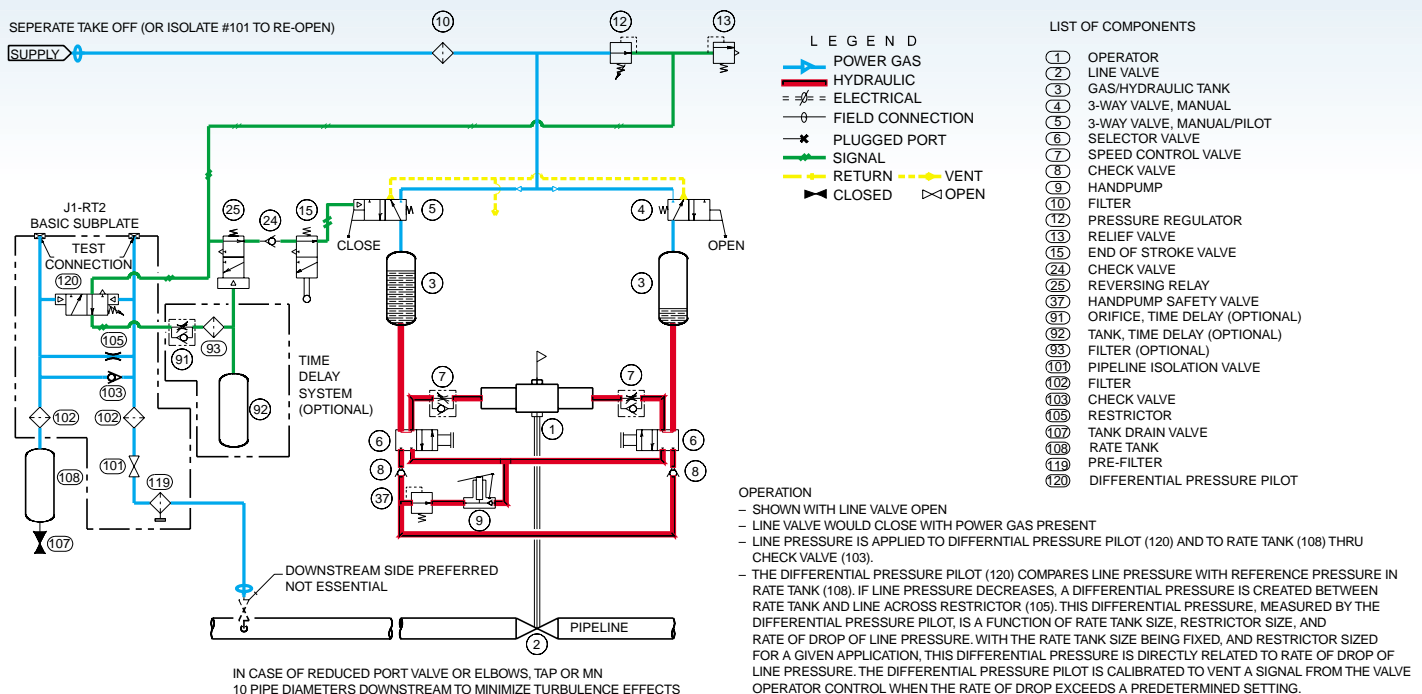
The Bettis DeltaMatic™ linebreak detection system is designed to automatically monitor a gas pipeline and send an instrument pressure signal if a predetermined rate of pressure drop is exceeded. The system is typically used to detect

a pipeline break situation and signal a valve operator. This automatic shutdown function provides safety and environmental protection in populated areas, river crossings, remote areas and other locations.

Features and Benefits

- Works on pipeline pressure, no electrical power required
- Allows normal pipeline pressure fluctuations without shutdown
- Compact and assembled as a complete unit
- Can be retrofitted into an existing system with minimal field hook-up
- Can be installed remote from or directly on valve operator
- Uses a labyrinth type flow restriction (restrictor) providing a large passage size compared to an equivalent orifice or metering valve
- Standard rate of drop ranges down to 5 and up to 120 psi/minute
- Rate of drop setting can be easily field adjusted
- Functions in extreme cold environment to -50°F [-46°C]

Application with Gas/Hydraulic Operator



Typical System Calibration

A restrictor size is selected at the factory, based on a specified rate of drop range and pipeline pressure range.

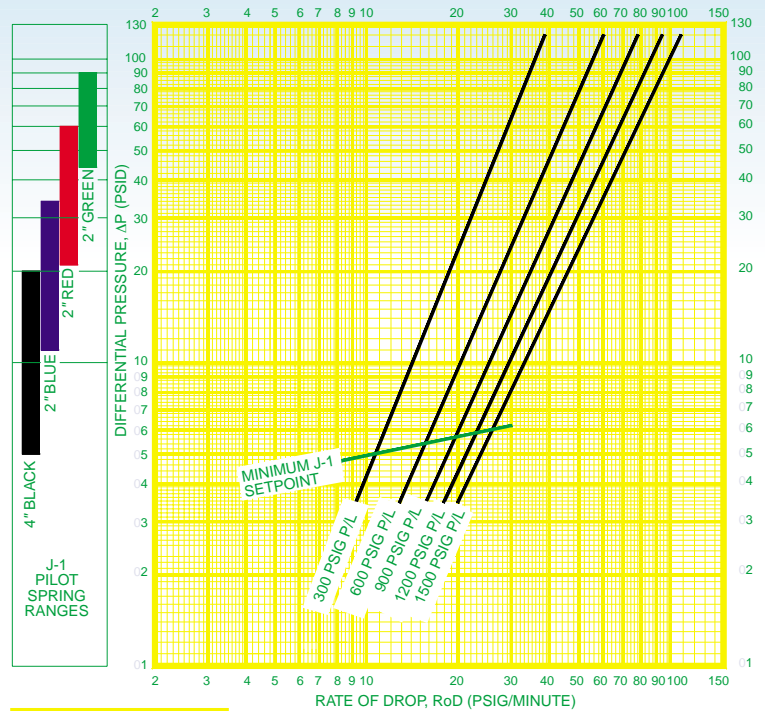
The calibration chart for the selected restrictor (example at right) is used to find the differential pressure (ΔP) corresponding to a specific rate of drop and pipeline pressure.

Example: If the rate of drop to be detected is 20 psi/min and pipeline pressure is 600 psig, then the corresponding ΔP is 26 psig (as shown).

The DeltaMatic pilot is then set to trip at this ΔP by selecting a spring and adjusting the setpoint.

The rate of drop setting of the system can be changed by adjusting the DeltaMatic pilot to a different ΔP . This may require selecting a different spring, which may be changed and recalibrated in the field.

If the required rate of drop range should change or be revised by the user, the DeltaMatic unit can be converted to a different nominal range in the field by fitting a different restrictor. (Table A).



Available Options

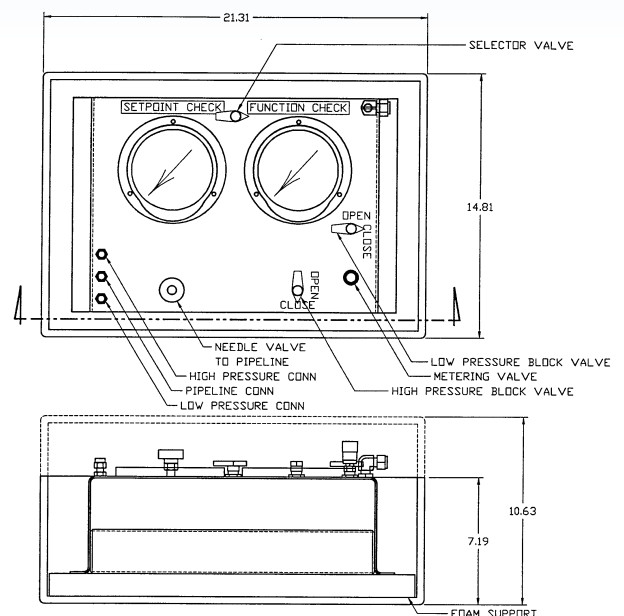
- Back-up low pressure detection
- Time delay control system, adjustable
1 to 4 minutes typical
- Sour gas pipeline application
- Weatherproof enclosure
- Prefilter on pipeline connection
- Alarm to control room pressure switch
- Higher rate of drop ranges
- Manual reset, lockout or override



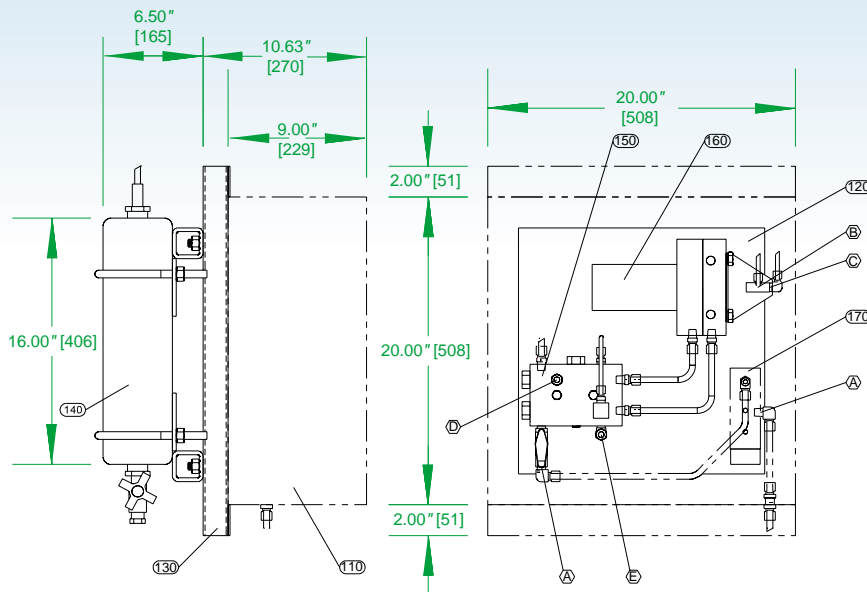
Calibration Kit

DeltaMatic Type Number	Nominal RoD Range (psi/min)
400416	5 to 15
200416	10 to 30
100416	20 to 60
050416	40 to 120

Table A



Typical Assembly/Dimensional



ITEM DESCRIPTION

- (110) ENCLOSURE (OPTIONAL)
- (120) SUBPLATE
- (130) MOUNTING BRACKET (TYPICAL)
- (140) RATE TANK
- (150) MANIFOLD ASSEMBLY
- (160) J-1 PILOT
- (170) PREFILTER (RECOMMENDED)

- (A) PIPELINE CONNECTION: 1/4 NPT
- (B) SIGNAL (COM) CONNECTION
150 PSI MAX: 1/4 NPT
- (C) SUPPLY (N.O.) CONNECTION
150 PSI MAX: 1/4 NPT
- (D) HP CALIBRATION PORT: 1/4 TUBE
- (E) LP CALIBRATION PORT: 1/4 TUBE
- WEIGHT: 60 LB [27.3 KG]
(EXCLUDING ITEMS 110 AND 130)

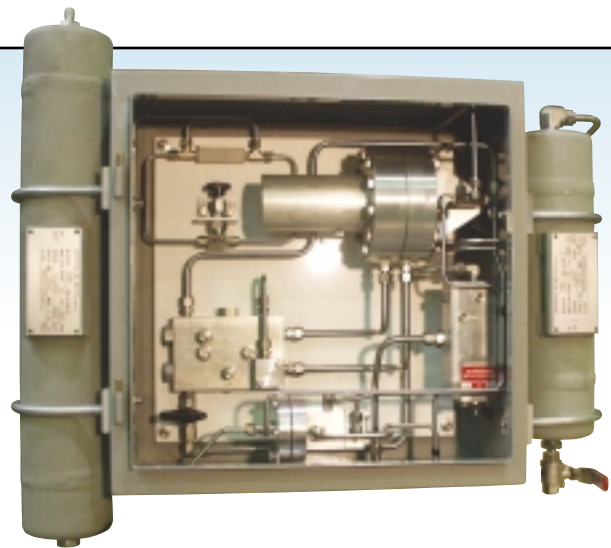
Ordering Information

Operating Environment

- Line Pressure range
- Max. and min. temperatures
- Humidity, rain and snowfall
- Service media
- Mounting; backplate or enclosure

Control specifications

- Rate of pressure drop range and setpoint
- Pneumatic supply pressure (maximum)
- Output signal: vent or apply to trip
- Additional controls, options
- Special requirements



www.EmersonProcess.com/Bettis

Bettis USA

P.O. Box 508
Waller, TX 77484 U.S.A.
T 281-727-5300
F 281-727-5303

Info.Bettis@EmersonProcess.com

Bettis UK Ltd.

3 Furze Court
114 Wickham Rd.
Fareham, Hampshire PO 16 7SH
T 44-1329-848-900
F 44-1329-848-901

Bettis Canada Ltd.

4112-91 A Street
Edmonton, Alberta T6E 5V2
Canada
T 780-450-3600
F 780-450-1400

Bettis France:

30/36 Allee du Plateau
93250 Villemomble
France
T 331-48-122610
F 331-48-122619

Bettis Int'l Sales Office:

Calgary, Canada
Rheinberg, Germany
New Bombay, India
Singapore

© 2003 Emerson Process Management. All rights reserved.

Important: Due to Emerson's continuing commitment to engineered product advancement, data presented herein is subject to change.

The contents of this publication are presented for information purposes only, and while effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, expressed or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available on request. We reserve the right to modify or improve the designs or specifications of our products at any time without notice.

The color orange, U.S. Reg. No. 2,739,393, is a registered trademark of the Bettis Corporation.

BETTIS

EMERSON
Process Management