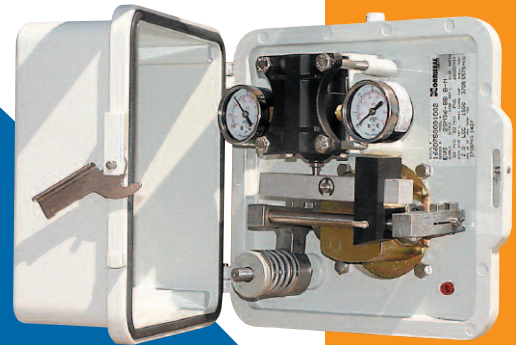


# Series EVS Liquid Level Controllers

## Zero-Leak Pilot:

Plus easy-to-service design



*Series EVS pneumatic controllers are easy-access, back-mounted units that provide liquid level or interface control for gas separator and scrubber applications. EVS controllers feature patented Envirosave™ snap (on/off) pilots, which prevent fugitive emissions and reduce bleeding of valuable gases. The Envirosave™ pilot was rated at zero leakage in a U.S. EPA Natural Gas STAR Program report.\**

*Series EVS controllers operate using Norriseal's force-balance technology, which delivers proven reliability and long service life. Service-enhanced design makes units simpler to install and easy to access for routine maintenance. EVS controllers accommodate both low- and high-pressure applications, making them ideal for a wide range of uses in natural gas production, compression and gas processing.*

## Features

### Service-Enhanced Design

- Controller body is back-mounted on the case for versatility and ease of installation
- Flush-mounted internals allow easy access
- Removable door
- Field-reversible output for direct or reverse action
- Field-configurable horizontal or vertical displacer

### Advanced Operation

- Environmentally friendly Envirosave snap (on/off) pilot stops fugitive emissions and conserves valuable gases
- Field-proven, force-balance technology
- High sensitivity for either Top Level or Interface control

- 0 to 60 psig supply and output gauges are standard
- Rated for extreme low-temperature operation (-50°F or -46°C ambient operating temperature)

### Extreme Reliability

- Weather-resistant sealed enclosure
- Polyurethane dry-powder coating complies with ASTM B117-90 (salt spray) and B2247-87 (humidity resistance)
- High-performance HSN seals standard
- Complies with NACE MR01.75-2002
- 40-micron SST supply filter resists contamination of the pilot

\*Natural Gas STAR Program report: Technical Support Documents; Options for Reducing Methane Emissions from Pneumatic Devices in the Natural Gas Industry; Appendix A: Gas Bleed Rate for Various Pneumatic Devices; August 18th, 2003; <http://www.epa.gov/gasstar/pneumat.htm>

This product is covered by U.S. Patents 4,700,738 and 6,497,246.

## Contents

- 2 Specifications
- 2 Dimensions
- 3 How to Order
- 4 Model Code

**NORRISEAL™**  
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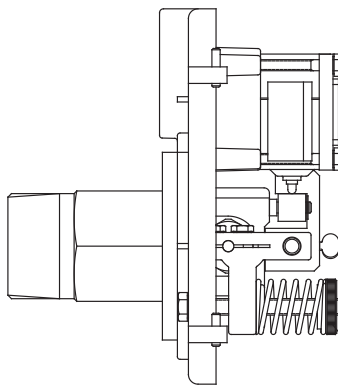
# Specifications

## PNEUMATIC PILOTS

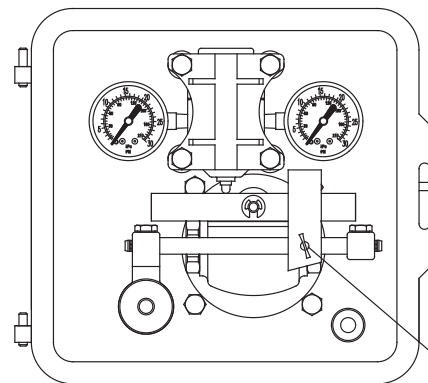
<b>Output</b>	
Envirosave, snap	0–20 psig, 0–30 psig
Optional: Throttle, proportional	3–15 psig, 6–30 psig
Snap, on/off	0–20 psig, 0–30 psig
<b>Supply Pressure Required</b>	
3–15 psig, 0–20 psig	20–30 psig (min.)
6–30 psig, 0–30 psig	35–40 psig (min.)
<b>Ambient Temperature</b>	–20° to +180°F (–29° to 82°C)
<b>Pilot Flow Capacity</b>	
Throttle $C_v$	0.394
Snap $C_v$	0.282
Envirosave™ $C_v$	0.282
<b>Proportional Band Adjustment</b> (Recommended adjustment for a full output pressure change over a percent of sensing element)	
Throttle	20–150%
Snap	7–55%
Envirosave™	7–55%
<b>Body</b>	
Throttle	Aluminum w/Aluminum Seat
Snap	Aluminum w/Aluminum Seat
Envirosave™	Aluminum w/Elastomeric Seat
<b>Gasket/diaphragm</b>	Nitrile
<b>Internal Valving</b>	Nylon
<b>Filter Element</b>	40 Micron SST
<b>Screws &amp; Nuts</b>	SST

## GENERAL

<b>Repeatability</b>	1.0% of output span
<b>Dead Band</b>	5.0% of input span
<b>Linearity</b>	1.75% of output span
<b>Mechanical Disturbance Effects on Setpoint</b>	1.0%
<b>Specific Gravity</b>	
Interface	0.035
Top level	0.35 to 2.00
<b>Process Temperature Limits of Body</b>	–50° to +400°F (–46° to +204°C)
<b>Process Pressure Rating</b>	1500 ANSI Class
<b>LLC Body Material</b>	ASTM A352 LCC –50° to +400°F (–46° to +204°C)
<b>Displacers</b>	PVC –20° to +140°F (–29° to +60°C) Acrylic –20° to +200°F (–29° to +93°C) 316 SST –70° to +400°F (–57° to +204°C)
<b>Case and Cover</b>	ASTM A380 die cast aluminum. Polyurethane dry-powder coating complies with ASTM B117-90 (salt spray) and B2247-87 (humidity resistance).
<b>Pressure Gauges</b>	Dual scale 0–60 psig/ 0–4 bar, bronze bourdon tube
<b>Operational Service Condition</b>	NACE MR01.75-2002 compliant
<b>Supply, Output and Case Vent/Relay Exhaust Connections</b>	1/4" NPT, vent assembly installed. (Discard for piped exhaust.)
<b>Total Weight</b>	16 lbs.



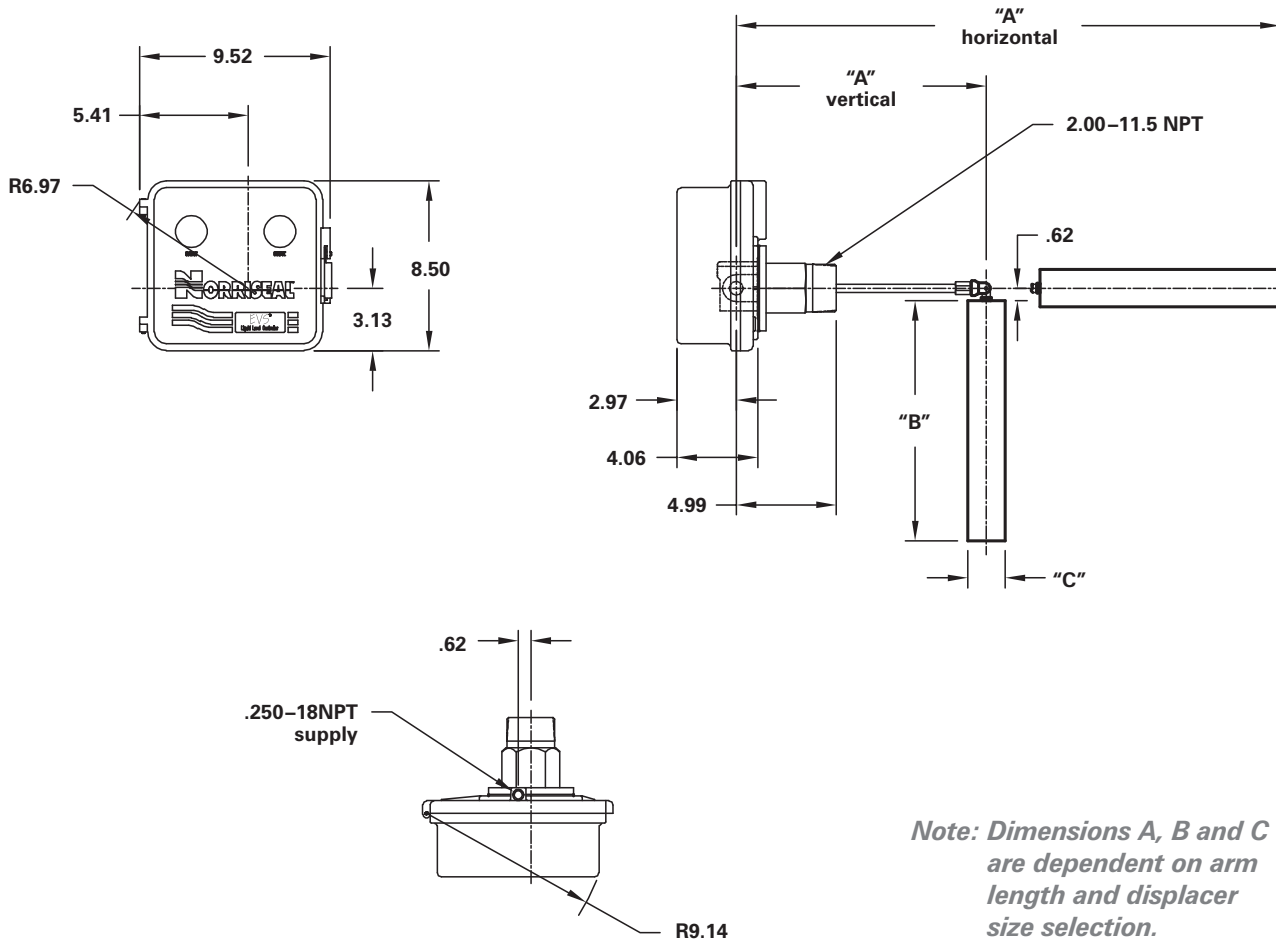
Level Adjustment  
(Set Point)



Sensitivity Adjustment  
(Dump Span)

## Dimensions

All dimensions are in inches.



*Note: Dimensions A, B and C are dependent on arm length and displacer size selection.*

## How to order

### Determine the model number

The model number specifies the series, size connection, type of pilot, pilot action, seals and service condition.

### Required application information

- A. Fluid media
- B. Process temperature (minimum and maximum)
- C. Process pressure
- D. Vessel size and diameter (distance of connection from bottom of vessel, any obstructions that may hinder performance)
- E. Displacer position (vertical or horizontal)
- F. Pilot action
- G. Top level or interface
- H. Arm length

# Model Code

## SIZE END CONNECTION

Description	Code
2.00	2

## BODY TYPE END CONNECTION

Description	Code
NPT (Screwed Male)	SM

## RATING BODY END CONNECTION

ANSI	Rating*	Code
1500	3705	36

\*Body pressure rating subject to selection of displacer (reference displacer chart below).

## MATERIAL: BODY/SHAFT/BLOCK

Body	Shaft	Bearing Block	Code
LCC Carbon Steel	316	316	-

## PNEUMATIC PILOT MODE

Description	Seat Material*	Code
Envirosave, Snap	Metal/Elastomer	B
Throttle, Proportional	Metal	T
Snap, on/off	Metal	S
Envirosave, Snap, Vib.	Metal/Elastomer	C

\*Same as seal material

## DISPLACER CHART DISPLACER TEMPERATURE/PRESSURE RATING

Material	Temp °F (°C)	Max Pressure
PVC	-20 to 140 (-29 to 60)	3705
Acrylic	-20 to 200 (-29 to 93)	3705
SST-2	-70 to 400 (-57 to 204)	2000*

Higher pressure SST displacers are available

# 2SM36-BBDB-N

## MOUNTING CASE

Type Mounting	Code
Back Mount	B

## SERVICE CONDITION

Description	Code
NACE MR0175-2002	N

## PRESSURE GAUGES

Description	Code
Pressure Gauges Bronze 0-60 psi (0-4 bar)	-

## WETTED/SEAL MATERIAL

O-Ring	Temp °F (°C)**	Code
HSN	-25 to 300 (-32 to 149)	B
Buna TH-70	-50 to 250 (-46 to 121)	Q
AFLAS	-25 to 400 (-32 to 204)	S

\*\*Seal temperature rating subject to selection of displacer.

## PILOT ACTION

Pilot Action	Code
Direct Acting	D
Reverse Acting	R

*Please contact your Norriseal representative for more details and assistance in specifying the optimal solution for your application.*



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