

# Pressure

## Econ-O-Trol Switch

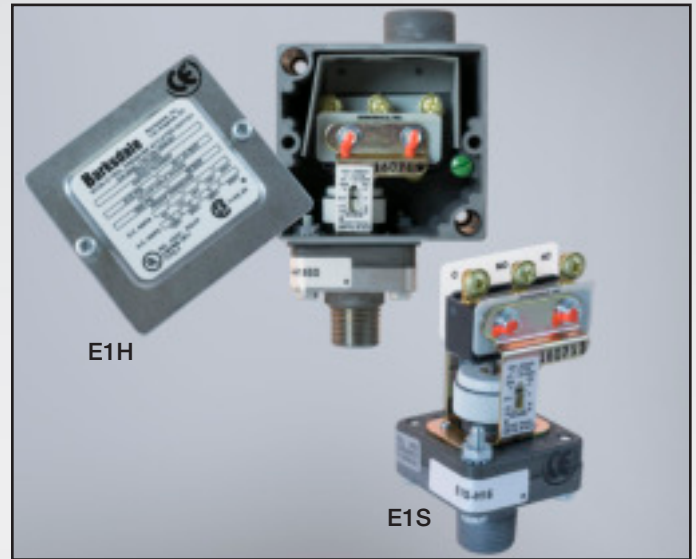
**E1S, E1H Series**

### Features

- ▶ Superior resolution
- ▶ Long life
- ▶ Easy setpoint adjustment
- ▶ Ideal for pressure or vacuum applications
- ▶ NEMA 1, 3 & 4
- ▶ Stripped and housed versions available

### Applications

- ▶ Medical equipment
- ▶ Pump & compressor monitoring
- ▶ Air proving in HVAC systems
- ▶ Irrigation systems
- ▶ Engine monitoring
- ▶ Machine tools
- ▶ Water & sewage treatment facilities
- ▶ Pulp & Paper Mills
- ▶ Metal working
- ▶ Food & beverage
- ▶ Steel mills

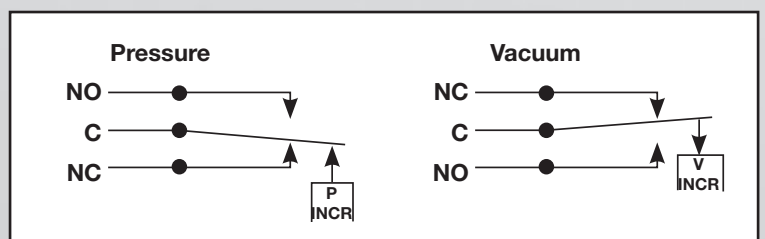


### General Specifications\*

<b>Accuracy:</b>	± 2% of the adjustable range
<b>Switch:</b> Type:	Single pole double throw (SPDT) snap action; single circuit
Rating:	Class H limit switch: 10 amps @ 125/250 VAC; 3 amps @ 480 VAC; 0.5 amps @ 24 VDC (standard).
<b>Wetted Parts:</b> Process Fitting:	Anodized aluminum (standard)
Seals & Diaphragms:	Buna-N (standard)
Enclosure:	Anodized aluminum (housed models)
<b>Electrical Connection:</b> Stripped Models:	Screw terminals
Housed models:	Screw terminals via 1/2" NPT female conduit connection
<b>Enclosure Ratings:</b> Stripped models:	NEMA 1
Housed models:	NEMA 4 & IP65
<b>Pressure Connection:</b> Stripped models:	1/2" NPT external with 1/8" NPT internal
Housed models:	1/4" NPT female
<b>Approvals:</b> UL:	Stripped models: UL recognized component (UR) Housed models: UL listed. File No. E42816
CSA:	All models and modifications shown are CSA listed under Guide 380-W-1.16, Class 3231, File LR22355
PED (European):	Compliant to PED 97/23/EC

<b>Temperature Range:</b> Operating:	-20° to +165°F (-29 to +74°C)
<b>Adjustment Setpoint:</b> Positive Pressure:	Turn self locking adjustment nut clockwise to increase setpoint; counterclockwise to decrease setpoint.
Vacuum:	Turn self locking adjustment nut counterclockwise to increase setpoint, clockwise to decrease setpoint (towards 30" Hg).
Adjustable Deadband (Optional):	Turn small self locking adjustment nut on limit switch counterclockwise to increase differential. As the differential is increased, the setpoint is also increased. Balance one adjustment against the other to obtain the desired setpoint.
<b>Options:</b>	-Plastic cover (stripped models only) -NEMA 4X enclosure (housed models only) -Cleaned for oxygen service -Manual reset -Adjustable deadband
<b>Shipping Weight:</b> Housed models:	1.5 lbs. approx.
Stripped models:	0.75 lbs. approx.

### Wiring Diagram

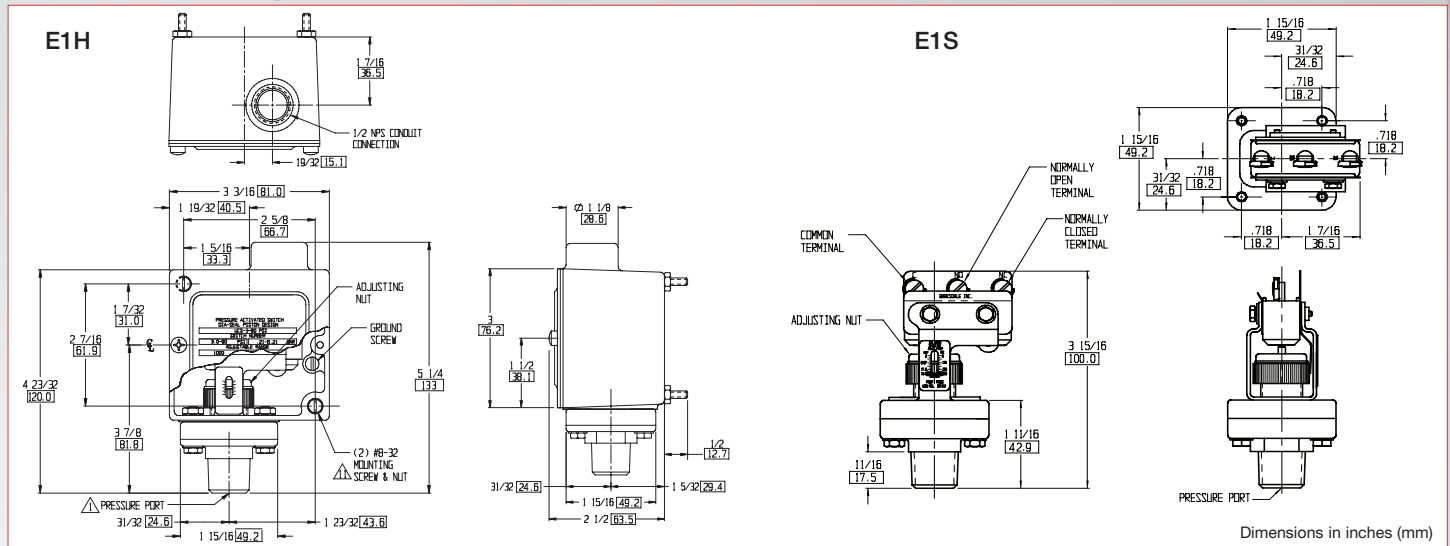


\* See product configurator for additional options.

# Econ-O-Trol Switch

# E1S, E1H Series

## Technical Drawing



## Product Configurator

Example **E1H** **-H** **250** **-P6** **-PLS**

### Base Configuration

E1S	Stripped models
E1H	Housed models

### Limit Switch<sup>1</sup>

-B	10 amps @ 125/250/480 VAC; 2 amps @ 600 VAC; 0.05 amps @ 125 VDC; 0.03 amps @ 250 VDC
-BT <sup>2</sup>	15 amps @ 125/250/480 Vac (E1S Series only)
-H	10 amps @ 125/250 VAC; 3 amps @ 480 VAC (standard)
-M	10 amps @ 125/250 VAC; 3 amps @ 480 VAC; 0.5 amps @ 125 VDC; 0.25 amps @ 250 VDC
-R <sup>3</sup>	15 amps @ 125/250/480 VAC; 0.05 amps @ 125 VDC; 0.03 amps @ 250 VDC <b>ADJUSTABLE DEADBAND</b>
-G <sup>4</sup>	10 amps @ 125/250/480 VAC; 2 amps @ 600 VAC; 0.4 amps @ 125 VDC; 0.2 amps @ 250 VDC <b>MANUAL RESET</b> (Available only with housed version). Requires -RD option.
-GH	1 amp @ 125 VAC; gold contact

### Pressure Range

	Adjustable Range				Approx. Deadband <sup>5</sup> (Actuation Value) psi (bar)	Proof Pressure psi (bar)	
	Decreasing - psi (bar)		Increasing - psi (bar)				
	Min	Max	Min	Max			
<b>VAC<sup>6</sup></b>	.5" Hg	29" Hg	3.0" Hg	30" Hg	.3 - 2.5" Hg	30 psi	Fixed Deadband
<b>15</b>	.5 (.03)	14.2 (.98)	.6 (.04)	15 (1)	.1 - 1.2 (.01 - .08)	1000 (67)	
<b>90</b>	3 (.2)	82 (5.5)	3.5 (.2)	90 (6)	.5 - 8 (.03 - .5)	1000 (67)	
<b>250</b>	10 (.7)	230 (15)	11 (.7)	250 (17)	1 - 20 (.07 - 1.3)	1000 (67)	
<b>500</b>	25 (1.7)	472 (31)	29 (2)	500 (33)	4 - 28 (.3 - 1.9)	1000 (67)	
<b>VAC<sup>6</sup></b>	1" Hg	30" Hg				30 psi	Adjustable Deadband
<b>15</b>	1 (.07)	15 (1)				1000 (67)	
<b>90</b>	6 (.4)	90 (6)				1000 (67)	
<b>250</b>	15 (1)	250 (17)				1000 (67)	
<b>500</b>	35 (2.3)	500 (33)				1000 (67)	

Must select class R limit switch.  
Consult sales drawing for deadband charts

### NOTES:

- Consult sales drawing for specific deadband values
- Available on E1S Series only (terminals are on horizontal plane)
- To increase differential, turn small, self-locking adjusting nut counter-clockwise
- Add -LC suffix at end of -G -RD (manual reset) models for UL approval as limit controls (No UL without -LC suffix). -LC is not available in range 500.
- Deadband values indicated when used with the "H" limit switch
- Vacuum models are provided with 1/2" NPT External, 1/8" NPT Internal  
"Combo" fitting only on E1S models. Vacuum switches have terminals in the orientation: C-NC-NO.
- Not available on vacuum models
- Not available in range 500
- "-BR" models have a proof pressure of 500 psi
- "-PLS" models have a proof pressure of 400 psi
- "-Z1" option requires use with SS option (include suffix -SS-Z1 in the part number)

### Options

-E1	Plastic cover (E1S models only) (Not UL approved)
-FX	NEMA 4X enclosure (E1H models only)
-RD <sup>4</sup>	<b>Manual reset</b> (must select class G limit switch)
-Z1 <sup>11</sup>	Cleaned for oxygen service
-Sxxx	Factory preset (consult factory)

### O-Ring/Diaphragm Material

Blank	Buna-N
-T <sup>7</sup>	Teflon
-V	Viton® diaphragm

### Pressure Connection (Material Option)

Blank	Anodized Aluminum (standard)
-F1	Impregnated fitting (not UL or CSA approved)
-F2	Nickel plated fitting
-SS <sup>7</sup>	316 Stainless steel fitting
-BR <sup>7,8,9</sup>	Brass fitting (Max adjustable pressure: 250 psi)
-PLS <sup>7,8,10</sup>	Polysulfone 40% glass filled; <b>for 1/8" NPT Internal with 1/2" NPT external thread type only.</b> (Max adjustable pressure: 250 psi)

### Pressure Connection (Thread Type)

E1S (Stripped models)	
Blank	1/8" NPT Internal with 1/2" NPT External Threads (standard)
-P4	1/4" NPT Internal Threads (Not available with -PLS option)
E1H (Housed models)	
Blank	1/4" NPT Internal Threads (standard) (Not available with -PLS option)
-P6	1/8" NPT Internal with 1/2" NPT External Threads