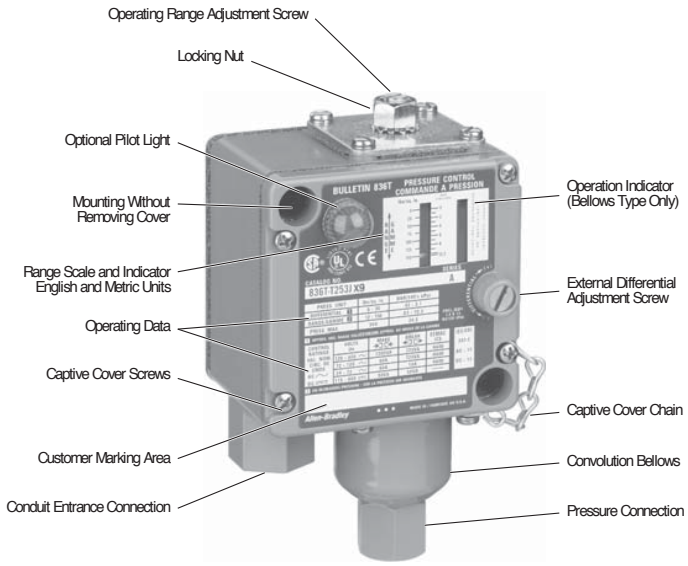
836T Pressure Controls, Traditional Machine Tool

- Operating ranges from 30 in. Hg vacuum...5000 psi
- Independently adjustable range and differential
- Copper alloy and stainless steel bellows
- 2 and 4-Circuit contact block
- Pressure difference controls available
- 1/4 in. and 3/8 in. N.P.T.F. and O-ring straight thread connections
- Type 4 & 13 and Type 7 & 9 and 4 & 13 combination enclosures



Bulletin 836T Pressure Controls are control circuit devices designed to meet the traditional requirements of the transportation, machine tool, and other heavy-duty industries. Allen-Bradley Bulletin 836T Pressure Controls can be used in pneumatic and hydraulic applications. The copper alloy bellows actuators can be used with air, water, oil, vapor, and other non-corrosive gases and liquids. Type 316 stainless steel bellows are available for more corrosive gases, vapors, and fluids.

A rugged stainless steel cylinder and stainless steel piston assembly is used for the higher-pressure coolant and hydraulic oil applications. can also be used with water and water-based fluids. The controls feature snap-action precision switches equipped with silver contacts. A relatively friction-free mechanism provides consistent operation regardless of mounting position. Devices are designed to allow easy adjustment of pressure settings.

Allen-Bradley Bulletin 836T Pressure Controls are used in many types of applications with adjustable ranges from 30 in. Hg vacuum...5000 psi. They can be used to control pneumatic systems and maintain a pressure tank within a preset and constant pressure range. They can be used to detect over-pressures of gases and liquids to prevent damage to valuable equipment. Pressure controls can also detect low pressure to protect equipment from loss of coolants and lubrication.

Bulletin 836T Pressure Controls are offered in a variety of styles to fit a wide range of applications. The devices are available with either a Type 1, 4 & 13, or 7 & 9 and 4 & 13 combined enclosure. They are available with two-circuit or four-circuit contact blocks. Accessories and modifications are available to tailor the devices to meet most application requirements.

Applications

- Machine tools
- Machine hydraulic pressures
- Material clamping fixtures
- Lubricant and coolant pressures
- Compactor ram pressures
- Air compressors

Product Overview

Photo	Description
Style T— Pressure Control	
	**Style T** • Independently adjustable operating range and differential • Single bellows or piston operation **Copper Alloy Bellows** • 1/4 in. N.P.T.F. female pipe connection • Adjustable operating range — 30 in. Hg vacuum…650 psi • Maximum line pressure — up to 1300 psi • Occasional surge pressure — up to 1600 psi **Type 316 Stainless Steel Bellows** • 1/4 in. N.P.T.F. female pipe connection • Adjustable operating range — 30 in. Hg vacuum…375 psi • Maximum line pressure — up to 600 psi • Occasional surge pressure — up to 600 psi **Piston** • 3/8 in. N.P.T.F. female pipe connection • SAE 7/16-20 UNF-2B thread O-ring boss seal • SAE 9/16-18 UNF-2B thread O-ring boss seal • Adjustable operating range — 40…5000 psi • Occasional surge pressure — up to 15,000 psi
Style D — Pressure Difference Control	
	**Style D** • Independently adjustable system difference range and differential • Two-bellows operation, one bellows connected to each system **Copper Alloy Bellows** • 1/4 in. N.P.T.F. female pipe connection • Adjustable system difference range — 1…70 psi • Maximum line pressure — up to 600 psi • Occasional surge pressure — up to 650 psi **Type 316 Stainless Steel Bellows** • 1/4 in. N.P.T.F. female pipe connection • Adjustable system difference range — 1…70 psi • Maximum line pressure — up to 500 psi • Occasional surge pressure — up to 500 psi

Standards Compliance

- UL 508
- UL 698 (Haz. Loc.)
- UL 1604 (Haz. Loc.)
- CSA 22.2 No. 14
- NEMA ICS-2

Certifications

File and Guide Numbers

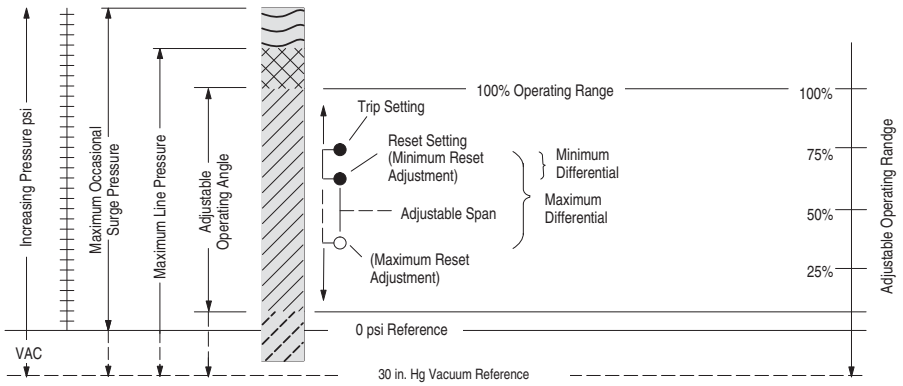
UL		CSA	
File Number	**Guide Number**	**File Number**	**Class**
E14842 E53048 (Haz. Loc.)(1)	NKPZ NOWT	LR1234 , LR11924 (Haz. Loc.)	3211-03 3218-05

(1) Hazardous Location Enclosure not CE compliant. All other enclosed devices are CE compliant

Technical Terms

Term	Definition
Adjustable operating range	Total span within which the contacts can be adjusted to trip and reset.
Trip setting	Higher pressure setting at which value the contacts transfer from their normal state to a change state.
Reset setting	Lower pressure setting at which value the contacts return to their normal state.
Adjustable differential	Difference between the trip and reset values
Minimum differential	When the differential is set to the lowest possible difference between trip and reset.
Maximum differential	When the differential is set to the highest possible difference between trip and reset.
Max. occasional surge pressure	Maximum surge pressure that can be applied to the actuator. Surges or ransients can occur during start-up and shut-down of a machine or system. Expressed in milliseconds, complex electronic instrumentation is required to measure the varying amplitude, frequency, and duration of this wave form. Extreme surges that occur approximately 8 times in a 24-hour period are negligible.
Maximum line pressure	Maximum sustained pressure that can be applied to the actuator without permanent damage. The control should not be cycled at this pressure. Note: Does not apply to piston type controls.
psi	Pounds per square inch gauge (positive pressure). Devices listed are in gauge pressure units which use atmospheric pressure as a reference. Atmospheric pressure at sea level is approximately 14.7 psi or 30 in. Hg.
Vacuum	Inches of mercury (in. Hg) vacuum (negative pressure).
Operating range adjustment screw	This screw is used to adjust the trip setting by varying the force of the main spring.
Differential adjustment screw	This screw is used to adjust reset setting by varying the force of the differential blade spring.
Pressure media	There are many types of pressure media that can be controlled. Examples include air, water, hydraulic fluids, and other types of gases and liquids. The type of media and the maximum system pressure will determine the type of actuator used for the pressure control application. See Pressure Control Selection.
Pressure connection	Common standard types of pressure connections used in control systems are 1/4 in. and 3/8 in. N.P.T.F. female pipe threads. SAE 7/16 and SAE 9/16 O-ring boss seals are also available (piston versions only).
Contact configuration	Bulletin 836T controls are available with either a 2-circuit or 4-circuit contact block. See Contacts.
Style D Specific Terms	
Style D — pressure difference controls adjustable system difference range	The adjustable operating range for a pressure difference control.
System difference pressure bushing	This bushing is used to adjust the trip setting by varying the force on the main spring.
Trip setting	Desired difference in pressure between the two bellows at which value the contacts transfer from their normal state to a changed state. This occurs in one of the following conditions: • The pressure in the bottom bellows is higher than the pressure in the top bellows by a value equal to the trip setting. • The pressure in the bottom bellows remains constant and the pressure in the top bellows decreases by a value equal to the trip setting.
Reset setting	Predetermined normal difference in pressure between the two bellows, at which value the contacts return to their normal state. This occurs in one of the following conditions: • The pressure in the bottom bellows is lower than the top bellows. • The pressure in the bottom bellows remains constant and the pressure in the top bellows increases.

Figure 28 - Graphic to Illustrate Technical Terms



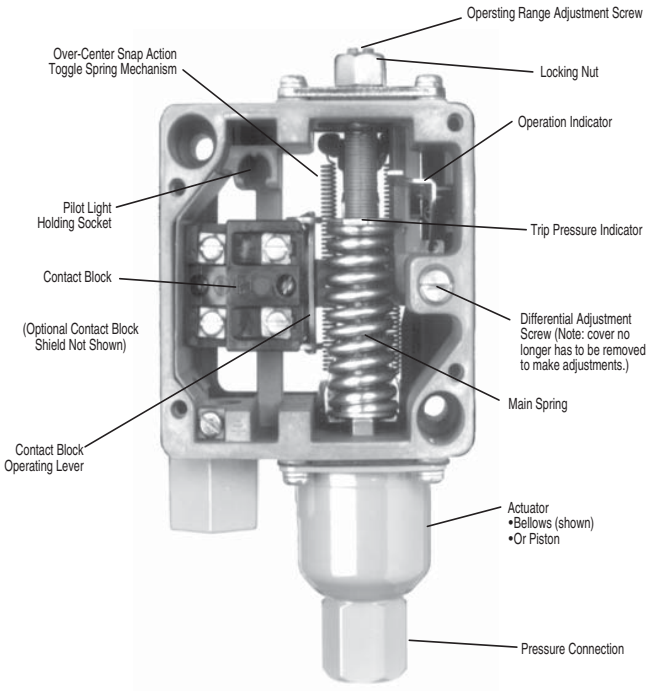
Operation

Bulletin 836T Pressure Controls are designed to open or close electrical circuits in response to changes in pneumatic (air or gas) or hydraulic (oil or non-corrosive liquids) pressure. Piston controls are not intended for use with air or water. Figure 2 shows the basic operating mechanism.

Pressure is applied to the actuator which can be either a bellows or piston type. As pressure rises, the actuator exerts force on the main spring. When the threshold force of the main spring is overcome, levers transfer the motion to the contact block, displacing the contacts — this is referred to as the trip setting. The unique lever design amplifies the actuator motion, providing shorter stroke, which results in maximizing bellows life.

The lever assembly also includes a virtually friction-free over-center toggle arrangement, providing positive snap action to the contact block for long contact life. As pressure falls, force on the differential spring increases and contacts return to their normal state — this is referred to as reset setting. Varying the force of the main spring (by turning the operating range adjustment screw) determines when the contacts will trip. Varying the force of the differential spring (by turning the differential adjustment screw) determines when the contacts will reset. Setting trip and reset values determines the operating parameters of the application.

Figure 29 - Basic Mechanical Structure



Applications for Control

Pressure controls can be used to either control or monitor a machine or process. Figure 30 shows a typical control application. Here, pressure is controlled within predetermined high and low values. Figure 31 shows a typical monitoring application. Here, pressure is monitored between a high and low value, signaling when a preset limit has been exceeded.

Figure 30 - Typical Control Application

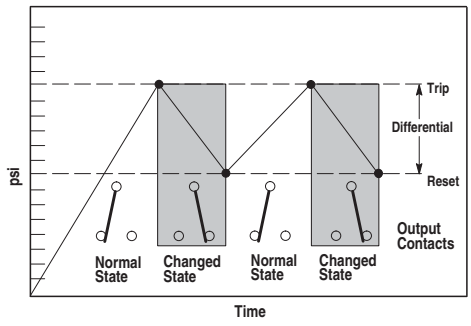
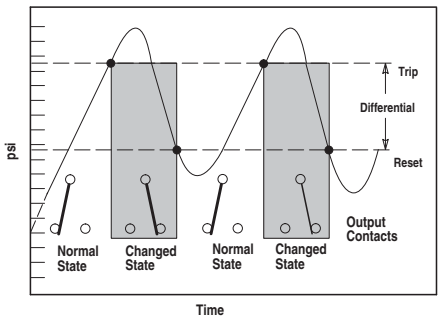


Figure 31 - Typical Monitoring Application



Control Setting — Style T Pressure Controls

Allen-Bradley controls are designed for ease of setting to help minimize installation time. Standard pressure controls shipped from the factory are set at the maximum operating range and minimum differential. By using a pressure gauge and following these simple directions, the control can be set to the specific requirements for each application. See Figure 32 on page 25.

1. Adjust trip setting

   The trip setting is controlled by the operating range adjustment screw and is adjusted externally. After loosening the lock nut, the trip setting is set by turning the operating range adjustment screw counterclockwise to lower the trip setting or clockwise to raise the trip setting. The approximate trip setting is shown on the indicating scale. When the proper setting is reached, simply tighten the lock nut.

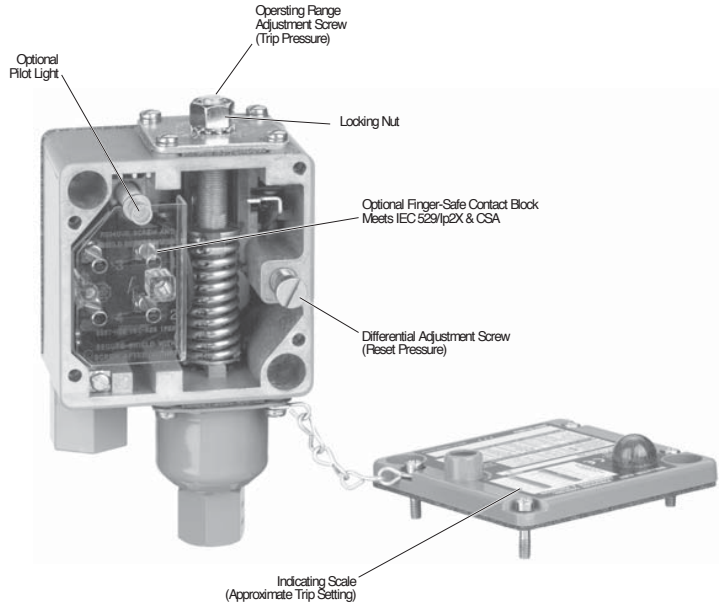
   IMPORTANT Turning the operating range adjustment screw causes the trip and reset settings to change in equal increments.

2. Adjust reset setting

   The reset setting is controlled by an external differential adjustment screw. The reset setting is set by turning the differential adjustment screw clockwise to increase the differential or counterclockwise to decrease the differential.

   IMPORTANT Adjusting the differential has little or no affect on the trip setting.

Figure 32 - Trip and reset adjustment for pressure controls



Control Setting — Style D Pressure Difference Controls

Standard pressure difference controls shipped from the factory are set at the maximum adjustable difference range and minimum differential. Remove the front cover and use a pressure gauge to make the following adjustments. See Figure 33.

1. Adjust trip setting (difference pressure)

   The trip setting is controlled by the system difference pressure bushing and is adjusted internally. With no pressure (open to atmosphere) applied to top bellows, apply a constant pressure to bottom bellows equal to the desired difference in pressure at which the contacts are to trip. Insert a 1/8 in. diameter rod into a hole in the bushing and turn bushing to the left. Continue to turn bushing until the mechanism trips; circuit 1-2 will open. At this value, the trip setting is set at the pressure which is being applied to the bottom bellows.

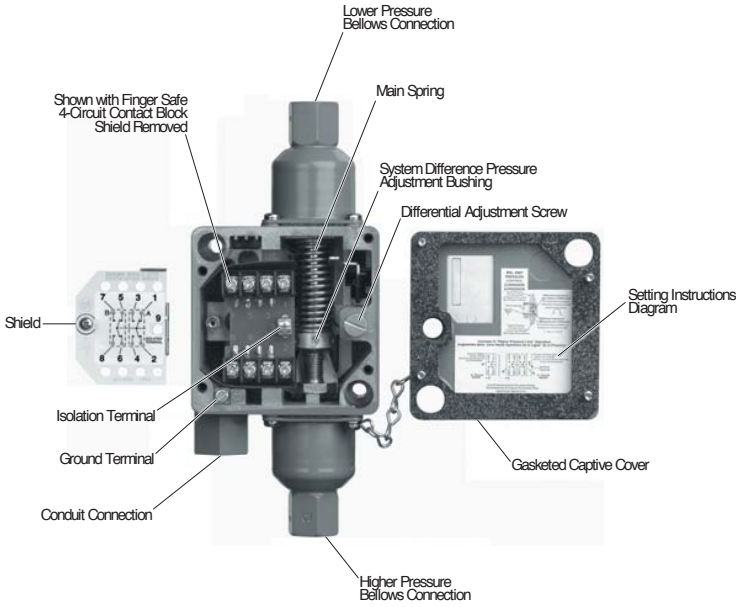
   IMPORTANT Turning the system difference pressure bushing will cause both the trip and reset settings to change in virtually equal increments.

2. Adjust reset setting (differential pressure)

   The reset setting is controlled by differential adjustment screw (this adjustment can be made with the cover on). The reset setting is adjusted by turning the differential adjustment screw clockwise to increase the differential or counterclockwise to decrease the differential.

   IMPORTANT Adjusting the differential has little or no affect upon the trip setting (difference pressure).

Figure 33 - Trip and reset adjustment for pressure difference controls — 4-circuit contact block

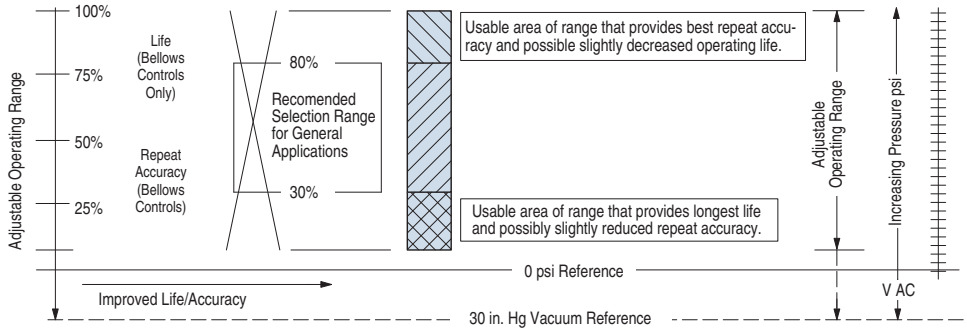


Repeat Accuracy and Mechanical Life

The design and construction of Bulletin 836T Pressure Controls provide a typical repeat accuracy equal to or better than the values shown in the repeat accuracy table below. Repeat accuracy is based on percent of maximum range, evaluated from test data and calculated using the formula per ICS 2-225 standards. Repeat accuracy and mechanical life of bellows type controls is graphically illustrated inFigure 34 The life curve does not apply to piston type controls.

For general applications, controls selected where the contacts operate between 30% and 80% of the operating range and where the maximum line and surge pressures do not exceed the specified values will provide excellent life and repeat accuracy. For more specific applications, it is important to note that the controls are designed to operate below or above these values. However, there can be a small trade-off between the factors of repeat accuracy and mechanical life.

Figure 34 - Repeat accuracy versus mechanical life graph



Repeat Accuracy

Type	Typical Characteristics (% of Maximum Range)(1)
Bellows	± 1%
Piston with seal	± 5% (2)
Piston without seal	± 3%

(1) Evaluation made from test data and calculated using formula per ICS 2-225 standards

(2) Seal adds additional friction and value shown takes into consideration initial breakaway frictional force incurred during start-up or infrequent cycle operation. On continual cycle operation the repeat accuracy approaches ±3%.

Conversion Factors (Rounded)Mounting without Removing Cover

psi x 703.1	mm/H20
psi x 27.68	in. H20
psi x 51.71	mm/Hg
psi x 2.036	in. Hg
psi x 0.0703	kg/cm2
psi x 0.0689	bar
psi x 68.95	mbar
psi x 6895	Pa
psi x 6.895	kPa

IMPORTANT psi - pounds per square inch (gauge). H_2O at 39.2 °F. Hg at 32 °F

Bulletin 836T controls can be mounted without removing the front cover. This helps prevent foreign materials from entering the opened enclosure during the interval between mounting and wiring of the control.

Factory Set Pressure Controls

Rockwell Automation will factory set pressure controls to customer specified values only if a Cat. No. 836T-__C device is selected. Unspecified pressure controls (cat. nos. without the "C" suffix) shipped from the factory are set at the maximum operating range and minimum differential. See Ordering Factory-Set Pressure Controls on page 39.

Temperature Range

The temperature range at +32 °F (0 °C) or below is based on the absence of freezing moisture, water, or other fluids that can solidify and impede the operation of the control.

Temperature Ratings

Operating	–22…+150 °F (–30…+66 °C)
Storage	–22…+200 °F (–30…+93 °C)

Contacts

Bulletin 836T controls feature 2 and 4-circuit contact blocks for added control circuit flexibility. Two-circuit contact blocks have one normally open contact and one normally closed contact and can be arranged for single-pole double-throw operation or separate circuit operation having the same polarity. 4-circuit contact blocks can be arranged for double-pole double-throw operation or separate circuit operation having the same polarity.

2-Circuit Contact Ratings

Maximum Operational Volts Ue	Utilization Category		Rated Operational Currents		
	IEC	NEMA	Volts Ue	Make	Break
AC 600	AC-15	A600	120…600	7200 VA	720 VA
			72…120	60 A	720 VA
			24…72	60 A	10 A
DC 600	DC-13	—	115…600	50 VA	50 VA

4-Circuit Contact Ratings

Maximum Operational Volts Ue	Utilization Category		Rated Operational Currents		
	IEC	NEMA	Volts Ue	Make	Break
AC 240	AC-15	B300	120…240	3600 VA	360 VA
DC 250	DC-13	R300	125…250	28 VA	28 VA

IMPORTANT NEMA does not rate contacts to switch low voltage and current. Bulletin 836T Styles T and D Pressure Controls are supplied with silver contacts. The devices are designed to deliver high force snap action to the contacts. This provides exceptional contact fidelity at 24V DC I/O card current level entry when the integrity of the enclosure is maintained.

Figure 35 - 2-Circuit Contact Block Wiring Configuration

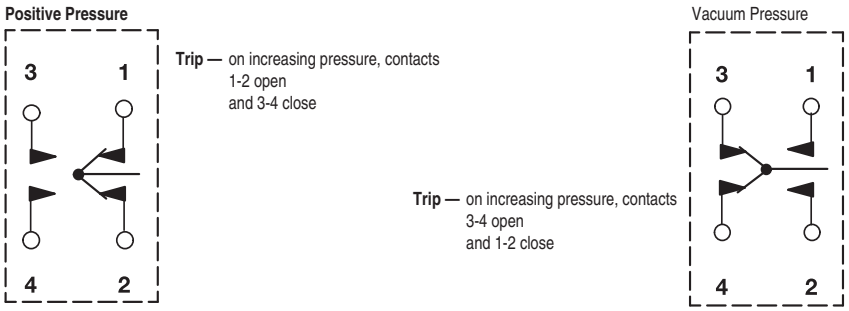
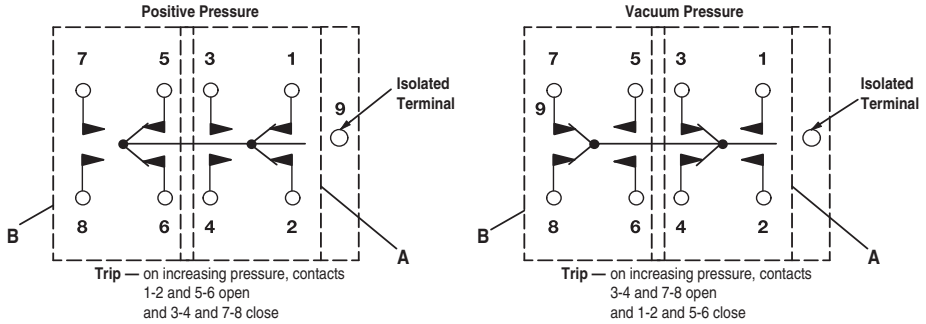


Figure 36 - 4-Circuit Contact Blocks



Note: Cicuits A and B are electrically isolated from one another.
A or C circuits must be the same polarity.

Nameplate with Removable Paint Mask

The masks are convenient for the many users who repaint controls to match the machine or color code equipment. Saves costly time-consuming hand masking necessary so as not to conceal product functional specifications and approval listings. This feature is standard on most controls at no additional cost. The paint mask feature cannot be supplied on controls with pilot lights. They are also not available on those devices where it is necessary to remove the mask and add suffix modifications to the catalog number or specific customer identification in the space provided.

Figure 37 - Cover with Transparent Mask and Instruction Label in Place

Figure 38 - Cover with Mask Partially Removed

Pressure Control Selection

The selection table below is an overview of the five types of AugustBulletin 836T Pressure Controls Rockwell Automation offers. Each type of control is suitable for use on many types of applications. Pressure ranges, pressure connections, enclosure types, and the compatibility of the actulator with different types of pressure media are given to assist in the selection of which type of control to use.

836T				
Actuator Type	**Copper Alloy Bellows**	**Type 316 Stainless Steel Bellows**	**Piston Type Without Seal**	**Piston Type With Seal**
Adjustable operating ranges	30 in. Hg vacuum…650 psi	30 in. Hg vacuum…375 psi	40…5000 psi	80…5000 psi
Adjustable differentials	2…125 psi	2…90 psi	20…650 psi	40…650 psi
Maximum line pressures	up to 1300 psi	up to 600 psi	—	—
Occasional surge pressures	up to 1600 psi	up to 600 psi	up to 15,000 psi	up to 15,000 psi
Pressure Media				
Air	•	•		
Water	•	•	•	•
Hydraulic fluids	•	•	•	•
Corrosive liquids(1)		•		
Non-corrosive liquids	•	•	•	•
Corrosive gases(2)		•		
Non-corrosive gases	•	•		
Enclosures				
Type 1, 4 & 13	•	•	•	•
Type 7 & 9 and 4 & 13, IP66	•	•	•	•
Pipe Connections				
Standard pressure connection	1/4 in. N.P.T.F. female pipe thread	1/4 in. N.P.T.F. female pipe thread	3/8 in. N.P.T.F. female pipe thread SAE 7/16-20 UNF-2B thread O-ring boss seal SAE 9/16-18 UNF-2B thread O-ring boss seal	3/8 in. N.P.T.F. female pipe thread SAE 7/16-20 UNF-2B thread O-ring boss seal SAE 9/16-18 UNF-2B thread O-ring boss seal

(1) Corrosive liquids must be compatible with Type 316 Stainless Steel Bellows.
(2) Corrosive gases must be compatible with Type 316 Stainless Steel Bellows.

IMPORTANT Pressure difference controls are supplied with either copper alloy or stainless steel bellows. See Product Selection at Style D Pressure Difference Controls with Copper Alloy Bellows — S.P.D.T. 2-Circuit Contact Block§ and Style D Pressure Difference Controls with Type 316 Stainless Steel Bellows — S.P.D.T. 2-Circuit Contact Block for details.

Ordering Information

When ordering Bulletin 836T Pressure Controls, consider the following:

- Device style
- Occasional surge pressure
- Adjustable operating range
- Pressure media
- Adjustable differential
- Enclosure type
- Maximum line pressure
- Pressure connection

1. Select Basic Device	2. Modifications	3. Accessories	3. Factory Options
Select a catalog number for the basic device. See Product Selection - Style T on page 31	If required, add one or more appropriate modification suffix codes to the catalog number of the basic device. See Modifications on page 37	If required, select appropriate accessories. See Accessories on page 38	Factory-set pressure controls. See Ordering Factory-Set Pressure Controls on page 39

Catalog Number Explanation

836T	–	T	25	1	J	X40	X15	C
		a	b	pressure specifications	c	d	Modifications Add suffix codes in descending order whenever possible. See Modifications on page 37.	e

a

Style of Device

Code	Description
T	Pressure Control
D	Pressure Difference Control

b

Operator Type

Code	Style	Description
25	T	Copper alloy bellows
26	T	Type 316 stainless steel bellows
30	T	Piston without seal
35	T	Piston with seal
40	T	Piston with seal (independent trip and reset adjustment)
45	D	Copper alloy bellows
46	D	Type 316 stainless steel bellows

c

Enclosure Type

Code	Description
J	1, 4 & 13 Industrial use
E	7 & 9 and 4 & 13 Combined hazardous locations

d

Contact Block Type

Code	Description
blank	2-circuit contact block - standard
X40	4-circuit contact block -

e

Customer Specified Trip or Reset

Code	Description
blank	Max. range/ min. differential
C	Customer specified trip/ reset setting(1)

(1) The requested trip/reset setting must be within the adjustable operating and differential ranges for the pre-configured product, refer to Product Selection.

Product Selection - Style T

Figure 39 - Style T — Type 1, 4 & 13 with Pilot Light, Range Locking Cap, and 5-Pin Mini-Receptacle

Figure 40 - Style T — Type 1, 4 & 13 with Pilot Light Option

Style T Pressure Controls with Copper Alloy Bellows (1)

Standard pressure controls shipped from the factory are set at the maximum operating range and minimum differential. For more information on standard pressure control settings and customer-specified pressure control settings, consult your local Rockwell Automation sales office or Allen-Bradley distributor.

Pressure Specifications				Enclosure Type	
Adjustable Operating Range [psi]	Adjustable Differential [psi] (Approximate Mid-Range Values)	Maximum psi		Type 1, 4 & 13	Type 7 & 9 and 4 & 13 (2)
		Line Pressure	Occasional Surge Pressure(1)	Cat. No.	Cat. No.
S.P.D.T. 2-Circuit Contact Block					
30 in. Hg vacuum…35	2…7	80	90	836T-T251J	836T-T251E
6…75	3…15	200	220	836T-T252J	836T-T252E
12…150	6…30	350	450	836T-T253J	836T-T253E
20…300	10…55	600	750	836T-T254J	836T-T254E
40…450	20…90	900	1200	836T-T255J	836T-T255E
60…650	30…125	1300	1600	836T-T256J	836T-T256E
D.P.D.T. 4-Circuit Contact Block					
30 in. Hg vacuum…35	2.2…7	80	90	836T-T251JX40	836T-T251EX40
6…75	4.5…15	200	220	836T-T252JX40	836T-T252EX40
12…150	9…30	350	450	836T-T253JX40	836T-T253EX40
20…300	15…55	600	750	836T-T254JX40	836T-T254EX40
40…450	30…90	900	1200	836T-T255JX40	836T-T255EX40
60…650	45…125	1300	1600	836T-T256JX40	836T-T256EX40

(1) Transients (pulses) can occur in a system prior to reaching a steady-state condition. Surge pressures within published values generated during start-up or shut-down of a machine or system, not exceeding eight times in a 24-hour period, are negligible.

(2) The combined Type 7 & 9 and 4 & 13 Hazardous Gas and Dust service enclosure is supplied with special gasket and O-ring seal to diminish/exclude moisture, fluids, and dust from entering the enclosure. Enclosure is Rated for the Following Environments: CLASS I Groups C and D, CLASS II Groups E,F, and G, CLASS III

(1) Copper alloy bellows can be used on water or air, and other liquids or gases not corrosive to this alloy.

Figure 41 - Style T — Type 1, 4 & 13 with Pilot Light Option

Figure 42 - Style T —Type 7 & 9 and 4 & 13

Style T Pressure Controls with Type 316 Stainless Steel Bellows(1)

Standard pressure controls shipped from the factory are set at the maximum operating range and minimum differential. For more information on standard pressure control settings and customer-specified pressure control settings, consult your local Rockwell Automation sales office or Allen-Bradley distributor.

Pressure Specifications				Enclosure Type	
Adjustable Operating Range [psi]	Adjustable Differential [psi] (Approximate Mid-Range Values)	Maximum psi		Type 1, 4 & 13	Type 7 & 9 and 4 & 13 (2)
		Line Pressure	Occasional Surge Pressure(1)	Cat. No.	Cat. No.
S.P.D.T. 2-Circuit Contact Block					
30 in. Hg vacuum…35	2…7	65	65	836T-T260J	836T-T260E
8…100	4…20	200	200	836T-T261J	836T-T261E
24…250	12…50	500	500	836T-T262J	836T-T262E
40…375	20…90	600	600	836T-T263J	836T-T263E
D.P.D.T. 4-Circuit Contact Block					
30 in. Hg vacuum…35	2.2…7	65	65	836T-T260JX40	836T-T260EX40
8…100	6…20	200	200	836T-T261JX40	836T-T261EX40
24…250	18…50	500	500	836T-T262JX40	836T-T262EX40
40…375	30…90	600	600	836T-T263JX40	836T-T263EX40

(1) Transients (pulses) can occur in a system prior to reaching a steady-state condition. Surge pressures within published values generated during startup or shutdown of a machine or system, not exceeding eight times in a 24-hour period, are negligible.

(2) The combined Type 7 & 9 and 4 & 13 hazardous gas and dust service enclosure is supplied with special gasket and O-ring seal to diminish/exclude moisture, fluids, and dust from entering the enclosure. Enclosure is rated for the following environments: CLASS I Groups C,D, CLASS II Groups E,F,G, and CLASS III

(1) Type 316 stainless steel bellows are available for more corrosive liquids or gases.

Piston-type Controls, Important Application Information

Piston-type controls are designed for use with oil and high water-based hydraulic fluids containing high-lubricity substances which will not attack alloy steel. Piston-type controls are available without seals to reduce piston friction. Reduced friction results in narrower switch differentials required for some applications.

All piston-type controls are equipped with a diaphragm assembly that conveys the motion of the piston to the mechanism, and prevents any fluid from entering the enclosure. Controls without seals are provided with a drain that should be connected to a line returning the piston by-pass fluid to a reservoir for reuse. The reservoir must be vented to the atmosphere. Manifold-type return lines that are fed by other equipment and/or contain a back-up check valve are not satisfactory. Extreme transient pulses can develop from hydraulic inertia in the line and rupture the diaphragm located on the secondary side of the piston, forcing fluid into the enclosure. For systems of this type, pressure controls with seals are recommended as return lines are not required if a slight amount of leakage, over time, can be tolerated. Drains should never be plugged. It is not recommended that a back pressure of more than the head pressure be applied to the diaphragm. This can occur if the reservoir is located above the machine. Variable back pressure can cause setting instability.

IMPORTANT
- Listed differentials can vary due to piston and cylinder tolerance, and characteristics of the fluid and application.
- Do not use piston-type controls on air, gases, or other liquids that will corrode stainless steel.
- Hydraulic fluid return line to reservoir is recommended

Figure 43 - Style T — Type 1, 4 & 13

Figure 44 - Style T —Type 1, 4 & 13 with Pilot Light, Mini-Receptacle, SAE Thread

Style T Pressure Controls Piston without Seal(1)

Standard Pressure Controls shipped from the factory are set at the maximum operating range and minimum differential.

Pressure Specifications				Enclosure Type	
Adjustable Operating Range [psi]	Adjustable Differential [psi] (Approximate Mid-Range Values)	Maximum psi		Type 1, 4 & 13	Type 7 & 9 and 4 & 13 (2)
		Line Pressure	Occasional Surge Pressure(1)	Cat. No.	Cat. No.
S.P.D.T. 2-Circuit Contact Block					
40…550	30...75	—	5000	836T-T300J	836T-T300E
70…1000	75...175	—	10000	836T-T301J	836T-T301E
200…3000	175...400	—	15000	836T-T302J	836T-T302E
350…5000	260...650	—	15000	836T-T303J	836T-T303E
D.P.D.T. 4-Circuit Contact Block (Hydraulic fluid return line to reservoir is recommended)					
40…550	30…75	—	5000	836T-T300JX40	836T-T300EX40
70…1000	60…175	—	10000	836T-T301JX40	836T-T301EX40
200…3000	150…400	—	15000	836T-T302JX40	836T-T302EX40
350…5000	260…650	—	15000	836T-T303JX40	836T-T303EX40

(1) Transients (pulses) can occur in a system prior to reaching a steady-state condition. Surge pressures within published values generated during start-up or shut-down of a machine or system, not exceeding eight times in a 24-hour period, are negligible.

(2) The combined Type 7 & 9 and 4 & 13 Hazardous Gas and Dust service enclosure is supplied with special gasket and O-ring seal to diminish/exclude moisture, fluids, and dust from entering the enclosure. Enclosure is Rated for the Following Environments: CLASS I Groups C,D; CLASS II Groups E,F,G; CLASS III

(1) When phosphate ester base hydraulic fluid is present, a special diaphragm assembly is required. See Modifications on page 37.

Figure 45 - Style T — Type 1, 4 & 13

Figure 46 - Style T —Type 1, 4 & 13 with Pilot Light, Mini-Receptacle, SAE Thread

Style T Pressure Controls Piston with Seal (Hydraulic fluid return line to reservoir is not required)
Standard Pressure Controls shipped from the factory are set at the maximum operating range and minimum differential.

Pressure Specifications				Enclosure Type	
Adjustable Operating Range [psi]	Adjustable Differential [psi] (Approximate Mid-Range Values)	Maximum psi		Type 1, 4 & 13	Type 7 & 9 and 4 & 13 (2)
		Line Pressure	Occasional Surge Pressure(1)	Cat. No.	Cat. No.
S.P.D.T. 2-Circuit Contact Block					
80…550	60...75	—	5000	836T-T350J	836T-T350E
140…1000	100...175	—	10 000	836T-T351J	836T-T351E
400…3000	300...400	—	15 000	836T-T352J	836T-T352E
700…5000	525...650	—	15 000	836T-T353J	836T-T353E
D.P.D.T. 4-Circuit Contact Block					
80…550	60…75	—	5000	836T-T350JX40	836T-T350EX40
140…1000	100…175	—	10 000	836T-T351JX40	836T-T351EX40
400…3000	300…400	—	10 000	836T-T352JX40	836T-T352EX40
700…5000	525…650	—	15 000	836T-T353JX40	836T-T353EX40

(1) Transients (pulses) can occur in a system prior to reaching a steady-state condition. Surge pressures within published values generated during start-up or shut-down of a machine or system, not exceeding eight times in a 24-hour period, are negligible.
(2) The combined Type 7 & 9 and 4 & 13 Hazardous Gas and Dust service enclosure is supplied with special gasket and O-ring seal to diminish/exclude moisture, fluids, and dust from entering the enclosure. Enclosure is Rated for the Following Environments: CLASS I Groups C,D; CLASS II Groups E,F,G;CLASS III

IMPORTANT When phosphate ester base hydraulic fluid is present, a special diaphragm assembly is required. See Modifications on page 37.

Independent Trip and Reset Adjustment for Wide Differential Applications — Piston with Seal, S.P.D.T. 2-Circuit Contact Block (Hydraulic fluid return line to reservoir is not required)

Standard Pressure Controls shipped from the factory are set at the maximum operating range and minimum differential.

Pressure Specifications			Enclosure Type	
Adjustable High Trip Setting [psi]	Adjustable Low Reset Setting [psi]	Occasional Surge Pressure [psi]	Type 1, 4 & 13	Type 7 & 9 and 4 & 13(1)
			Cat. No.	Cat. No.
500…3000	0…250	15 000	836T-T400J	836T-T400E

(1) The combined Type 7 & 9 and 4 & 13 Hazardous Gas and Dust service enclosure is supplied with special gasket and O-ring seal to diminish/exclude moisture, fluids, and dust from entering the enclosure. Enclosure is Rated for the Following Environments: CLASS I Groups C,D; CLASS II Groups E,F,G;CLASS III

Product Selection - Style D

Figure 47 - Style D — Type 1, 4 & 13with Pilot Light Option

Figure 48 - Style D — Type 1, 4 & 13

Style D Pressure Difference Controls with Copper Alloy Bellows[1] [2] [3]

Standard Pressure Difference Controls shipped from the factory are set at the maximum adjustable difference range and minimum differential.

Pressure Specifications					Enclosure Type 1, 4 & 13
Adjustable System Difference Range [psi]	Adjustable Differential [psi] (Approximate Mid-Range Values)	Line Pressure psi		Max. Occasional Surge Pressure [psi]	Cat. No.
		Minimum	Maximum		
S.P.D.T. 2-Circuit Contact Block					
1…9	1…7	30 in. Hg Vac.	80	90	836T-D450J
2.5…20	2.5…15	30 in. Hg Vac.	175	200	836T-D451J
5…40	5…30	30 in. Hg Vac.	350	375	836T-D452J
10…70	10…50	0	600	650	836T-D453J
D.P.D.T. 4-Circuit Contact Block					
1…9	1.5…7	30 in. Hg Vac.	80	90	836T-D450JX40
2.5…20	3.75…15	30 in. Hg Vac.	175	200	836T-D451JX40
5…40	7.5…30	30 in. Hg Vac.	350	375	836T-D452JX40
10…70	15…50	0	600	650	836T-D453JX40

(1) Copper alloy bellows can be used on water or air, and other liquids or gases not corrosive to this alloy.

(2) Finger-safe shield supplied as standard.

(3) Transients (pulses) can occur in a system prior to reaching a steady-state condition. Surge pressures within published values generated during startup or shutdown of a machine or system, not exceeding eight times in a 24-hour period, are negligible.

Figure 49 - Style D — Type 1, 4 & 13 with Pilot Light Option

Figure 50 - Style D — Type 1, 4 & 13

Style D Pressure Difference Controls with Type 316 Stainless Steel Bellows[1][2][3]

Standard Pressure Difference Controls shipped from the factory are set at the maximum adjustable difference range and minimum differential.

Pressure Specifications					Enclosure Type 1, 4 & 13
Adjustable System Difference Range [psi]	Adjustable Differential [psi] (Approximate Mid-Range Values)	Line Pressure [psi]		Max. Occasional Surge Pressure [psi]	Cat. No.
		Minimum	Maximum		
S.P.D.T. 2-Circuit Contact Block					
1…9	1…7	30 in. Hg Vac.	65	65	836T-D460J
5…25	4…15	0	175	200	836T-D462J
12…70	12…50	0	500	500	836T-D463J
D.P.D.T. 4-Circuit Contact Block					
1…9	1.5…7	30 in. Hg Vac.	65	65	836T-D460JX40
5…25	6…15	0	175	200	836T-D462JX40
12…70	18…50	0	500	500	836T-D463JX40

(1) Type 316 stainless steel bellows are available for corrosive liquids or gases

(2) Transients (pulses) can occur in a system prior to reaching a steady-state condition. Surge pressures within published values generated during startup or shutdown of a machine or system, not exceeding eight times in a 24-hour period, are negligible.

(3) Finger-safe shield supplied as standard.

Modifications

Modifications are ordered by adding the appropriate modification suffix code to the catalog number of the basic device. Add suffix codes to the catalog number in descending order.

Item	Description	Suffix Code
Oxygen/nitrous oxide service	Bellows and fittings specially prepared for oxygen and nitrous oxide service. Devices tested with pure oxygen, bellows plugged for protection from contamination and a tag warning against contamination is applied.	X2
External adjustment sealed	The 836T external adjustment is sealed, requiring cover removal to adjust differential (includes contact block shield)	X3
Tamper resistant setting	Range and differential adjustments are factory sealed. Price includes factory setting charge.(2)	X4
SAE 7/16-20 UNF thread O-ring boss seal (piston type pressure control)	Female SAE straight thread O-ring seal designed to prevent leaks and minimize loss of hydraulic fluids.	X6
SAE 9/16-18 UNF thread O-ring boss seal (piston type pressure control)		X7
LED Pilot Light, 120V AC	Contact modified industrial controls team to select LED color and to configure catalog number.	—
Red LED pilot light 24V DC	A high-intensity LED 24V DC pilot light is available to meet the requirements of the automotive, machine tool builders, and other industries. The current rating is 22 mA and can be wired for ON or OFF operation.‡	X15
Green LED pilot light 24V DC		X18
Special diaphragm assembly (piston type pressure control)	Diaphragm is made of Viton® and Nomex® fabric. Required when phosphate ester base and other adverse hydraulic fluids are present. Use on Catalog Numbers **836T-T300J** through **836T-T303J** series controls.	X25
Special diaphragm and O-ring assembly (piston type pressure control)	Diaphragm is made of Viton® and Nomex® fabric, O-ring is made of Viton®. Required when phosphate esterbase and other adverse hydraulic fluids are present. Use on Catalog Numbers **836T-T350J, -T351J, -T352J, -T353J** and **-T400J** series controls.	X26
Viton® enclosure gaskets	Special enclosure gaskets made of Viton® are available for applications where the standard gasket materials are not fluid compatible. Viton® is generally specified by the user for use with existing and newly developed coolants and hydraulic fluids to maintain enclosure integrity. These include cover, backplate, cover, and bellows or piston gaskets. **Note**: Viton® enclosure gaskets are often used with special diaphragm assemblies **(X25 or X26)**. See description above.	X29
4-Pin micro-type receptacle without pilot light‡	Select the desired pin wiring configuration. Rated at 4 A, 250V. Pin/Wiring Code: 1 – Brown, 2 – White, 3 – Blue, 4 – Black	Refer to Wiring Diagrams on page 40
4-Pin micro-type receptacle with prewired pilot light‡	Select the desired pin wiring configuration and pilot light (X9, X15, or X18; see above for specifications) from the Wiring Diagrams. Rated at 4 A, 250V. Pin/Wiring Code: 1 – Brown, 2 – White, 3 – Blue, 4 – Black The X139 modification is only applicable for 4-circuit contact block configurations and includes a 10 kW resistor.	
5-Pin mini-type receptacle without pilot light‡	Select the desired pin wiring configuration. Rated at 8 A, 600V.	
5-Pin mini-type receptacle with prewired pilot light‡	Select the desired pin wiring configuration. Includes receptacle and pilot light. Rated at 8 A, 600V.	
5-Pin micro-connect receptacle without pilot light‡	Select the desired pin wiring configuration. Add number "1" to the suffix number immediately following the letter "X." **Example: "X19" becomes "X119."** Rated at 3 A, 300V. Pin/Wiring Code: 1 – Red with white tracer, 2 – Red, 3 – Green (Gnd), 4 – Red with yellow tracer, 5 – Red with Black Tracer	
5-Pin micro-connect receptacle with prewired pilot light‡	Select the desired pin wiring configuration and pilot light (X9 or X15, see above for specifications. Add number "1" to the Suffix Number immediately following the letter "X." **Example: "X21X9" becomes "X121X9."** Rated at 3 A, 300V. Also included is modification X145 and X181. Pin/Wiring Code: 1 – Red with white tracer, 2 – Red, 3 – Green (Gnd), 4 – Red with yellow tracer, 5 – Red with black tracer	
Additional optional receptacles and wiring(1)	For assistance, please consult your local Rockwell Automation sales office or Allen-Bradley distributor.	

(1) Not available on the Type 7 & 9 and 4 & 13 combined enclosed devices.
(2) See Ordering Factory-Set Pressure Controls on page 39

Accessories

Accessories are ordered as separate catalog numbers. Select the required accessories from the accessories table below.

Item	Description	Type	Cat. No.
External fixed pulsation snubbers	Controls are supplied as standard with an internal pulsation snubber. However, a control properly selected and used within the adjustable range values, yet having a short bellows life, is a good indication of the presence of extreme surge pressures. External fixed pulsation snubbers are available to provide **additional** dampening when extreme pulsations or surges are present. Recommended if more than eight line surges occur in a 24-hour time period.	Snubber for bellows control 1/4-18 N.P.T.F. thread	836-N7
		Snubber for piston control 3/8-18 N.P.T.F. thread	836T-N8
Selectable element pulsation snubbers	Controls are supplied as standard with an internal pulsation snubber. However, a control properly selected and used within the adjustable range values, yet having a short bellows life, is a good indication of the presence of extreme surge pressures. Selectable element pulsation snubbers are supplied with five different elements to provide a selectable balance between maximizing pressure control life and minimizing control response time. Pulsation snubbers are supplied with the mid-range element already mounted and four other color-coded porosity elements included in the package. See "Selectable Pulsation Snubber Porosity Elements" table on for porosity specifications.	Snubber for bellows control 1/4-18 N.P.T.F. thread	836-N40
Locking cap	Deters unauthorized tampering of range setting. Once installed, the locking cap can be removed with a screwdriver to re-adjust the control.	—	836T-N13
Isolation trap with two 1/4 in. male pipe fittings	An isolation trap is available for high-temperature media applications from 150…600 °F or corrosive applications compatible with Type 316 stainless steel tubing and fittings. The isolation coil is inserted between the bellows of the pressure control and the elevated temperature line of the system. The isolation trap will fill with condensed water or can be filled with water or suitable fluid when installed. A silicone buffer fluid is available in a convenient dispenser. Copper alloy lower and higher pressure range bellows can be applied to many applications using the isolation trap. The silicone buffer fluid is used to isolate many corrosive substances from coming in contact with the bellows. The isolation trap is rated at 3000 psi working pressure. Not available for piston-type controls.See photo below.		836-N25
Isolation trap with one 1/4 in. male and one 1/4 in. female pipe fittings			836-N26
2 oz. of buffer fluid to fill bellows and tubing			836-N27
Metric electrical entry conduit adapters	BS 20 mm thread adapter		836T-N36
	Pg 13.5 thread adapter		836T-N37

Selectable Pulsation Snubber Porosity Elements

Recommended Type of Service[1]	Color Code[2]	Porosity
Viscous fluids (over 500 SSU)	None	Coarser
Medium type oils (225…500 SSU)	Black	
Water and light oils (30… 225 SSU)	Brown	
Low viscosity fluids (under 30 SSU)	Green	
Air and other gases	Red	Finer
One of each of the above	—	Assorted

(1) Saybolt Seconds Universal (SSU) — units of viscosity measurement.
(2) Color code is located on end of element.

Figure 51 - Isolation Trap and Silicone Buffer Fluid

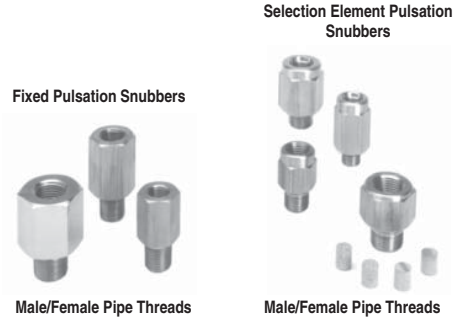


Figure 51 - Pulsation Snubbers

Conversion Kits

Conversion Kits are ordered by adding the appropriate suffix code to the catalog number of the basic device. Select the required conversion kits from the table below.

Item	Description	Suffix Code
Red LED pilot light conversion kit	Converts standard control to control with 24V DC LED pilot light; has a 22 mA current rating. Not available on Type 7 & 9 devices. Kit includes pilot light and cover assembly.	N15
Green LED pilot light conversion kit		N18

EXAMPLE To convert a Cat. No. **836T-T301J** to a Cat. No. **836T-T301JX15**, order Cat. No. **836T-T301JN15**.

Renewal Parts

Renewal Parts are ordered as separate catalog numbers. Select the required renewal parts from the table below.

Item	Description	Cat. No.
2-Circuit contact block renewal kit	Allows renewal of worn contacts for Bulletin 836T controls.	836T-N1
Renewal seals for piston-type controls	For use on Cat. No. 836T-T350J.	836T-N20
	For use on Cat. No. 836T-T351J.	836T-N21
	For use on Cat. No. 836T-T352J and 836T-T400J.	836T-N22
	For use on Cat. No. 836T-T353J.	836T-N23

Ordering Factory-Set Pressure Controls

Standard Product Offering

Standard pressure controls shipped from the factory are set at the maximum operating range and minimum differential. These settings vary for each pressure switch family depending on the combination of Style, Operator Type, and Pressure Specification configuration options. These pressure switches do not require a custom trip / reset setting characteristic. Customers still have the ability to set the operating range and differential in the field as long as they are within the limitation of switch.

Custom Product Offering (Customer-Specified Settings)

Pressure controls shipped from the factory can be set to customer-requested values as long as they are within the limitation of the switch. See Product Selection, and reference Adjustable Operating Range and Adjustable Differential values in the tables. These trip and reset ranges vary depending on the Style, Operator Type, and Pressure Specification configuration. These switches require a custom trip / reset setting characteristic. To request a pressure switch with customer specified trip and/or reset settings, order a pressure control catalog number ending with the "C" Custom Trip Reset Setting characteristic and include one of the following factory-set pressure control statements when the order is placed (within the Customer Review Request Notes field):

EXAMPLE

Normally Closed (N.C.) contacts to open at * psi increasing pressure and close at * psi decreasing pressure.
—OR—
Normally Open (N.O.) contacts to close at * psi increasing pressure and open at * psi decreasing pressure.

If minimum differential is not critical and the inherent minimum differential satisfies the application, specify the factory setting as follows:

Normally Closed (N.C.) contacts to open at * psi increasing pressure. Minimum differential.
—OR—
Normally Open (N.O.) contacts to close at * psi increasing pressure. Minimum differential.

* Specify psi (pounds per square inch) or, in. Hg vacuum (inches of mercury vacuum)

When a specific factory setting is requested, the specific terminal connections must be specified — e.g., N.O. or N.C. It must also be specified whether the contact operation is occurring on either increasing or decreasing pressure.

If not specified, settings tolerances will be as shown in table.

Setting Tolerances

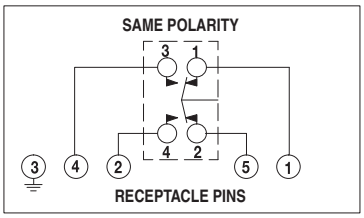
Pressure Range	Tolerance
30 in. Hg Vac.…0 psi	+/- 1 in. Hg Vac.
> 0…100 psi	+/- 1 psi
> 100…300 psi	+/- 2 psi
> 300…500 psi	+/- 5 psi
> 500…1000 psi	+/- 10 psi
> 1000…5000 psi	+/- 50 psi

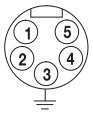
Wiring Diagrams

Bulletin 836T 5-Pin Mini-Type Receptacle Option Wiring Reference (J1 Wiring).[1][2]

Figure 52 - Without Pilot Light

Suffix X19





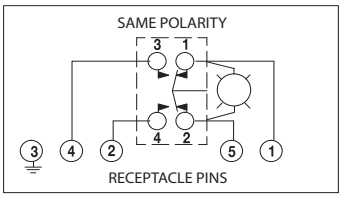
PIN/WIRE CODE
1= White
2= Red
3= Green
4= Orange
5= Black

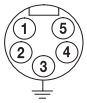
PRESSURE: CIRCUIT 1-2 (PINS 1&5) OPENS ON RISING PRESSURE
VACUUM: CIRCUIT 3-4 (PINS 4 & 2) OPENS ON INCREASING VACUUM (TOWARD 30 in. HG)

Figure 53 - With Pilot Light[1]

Suffix X21X9

WITH LED PILOT LIGHT 120V AC ONLY PILOT LIGHT WIRED ACROSS CIRCUIT 1-2 (PINS 1 & 5)



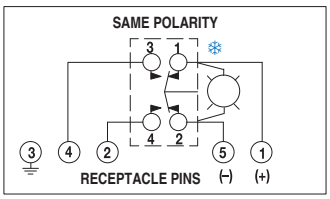


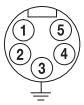
PIN/WIRE CODE
1= White
2= Red
3= Green
4= Orange
5= Black

PRESSURE: CIRCUIT 1-2 (PINS 1&5) OPENS ON RISING PRESSURE
VACUUM: CIRCUIT 3-4 (PINS 4 & 2) OPENS ON INCREASING VACUUM (TOWARD 30 in. HG)

Suffix X21X15

WITH LED PILOT LIGHT 24V DC ONLY PILOT LIGHT WIRED ACROSS CIRCUIT 1-2 (PINS 1 & 5)



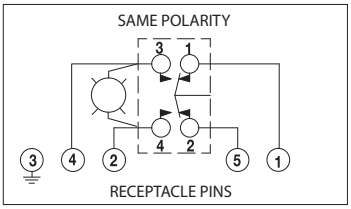


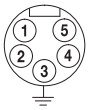
PIN/WIRE CODE
1= White
2= Red
3= Green
4= Orange
5= Black

PRESSURE: CIRCUIT 1-2 (PINS 1 & 5) OPENS ON RISING PRESSURE
VACUUM: CIRCUIT 3-4 (PINS 4 & 2) OPENS ON INCREASING VACUUM (TOWARD 30 in. HG)

Suffix X22X9‡

WITH LED PILOT LIGHT 120V AC ONLY PILOT LIGHT WIRED ACROSS CIRCUIT 3-4 (PINS 4 & 2)



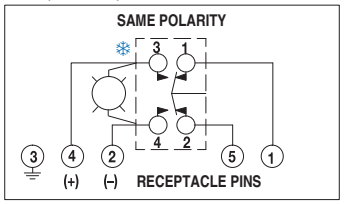


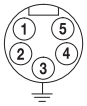
PIN/WIRE CODE
1= White
2= Red
3= Green
4= Orange
5= Black

PRESSURE: CIRCUIT 1-2 (PINS 1 & 5) OPENS ON RISING PRESSURE
VACUUM: CIRCUIT 3-4 (PINS 4 & 2) OPENS ON INCREASING VACUUM (TOWARD 30 in. HG)

Suffix X22X15 ‡

WITH LED PILOT LIGHT 24V DC ONLY PILOT LIGHT WIRED ACROSS CIRCUIT 3–4 (PINS 4 & 2)





PIN/WIRE CODE
1= White
2= Red
3= Green
4= Orange
5= Black

PRESSURE: CIRCUIT 1-2 (PINS 1 & 5) OPENS ON RISING PRESSURE
VACUUM: CIRCUIT 3-4 (PINS 4 & 2) OPENS ON INCREASING VACUUM (TOWARD 30 in. HG)

‡ Note pilot light polarity. § X22 not available with 4-circuit pressure controls.

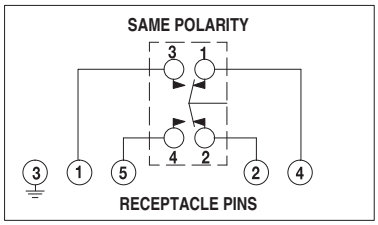
(1) The pilot lights shown in these diagrams are wired across the terminals and in series with the load. Pilot light is OFF when the load is energized, ON when the load is de-energized. For simultaneous energization of the load and pilot light, or other optional wiring configurations, consult your local Rockwell Automation sales office or Allen-Bradley distributor. You can only select ONE wiring configuration per device.

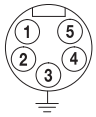
(1) See applicable codes and laws.
(2) The X9 pilot light option is a part of the Modified Industrial Controls product offering, see Rockwell Automation publication CMPNTS-BR002 for more information.

Bulletin 836T 5-Pin Mini-Type Receptacle Option Wiring Reference (J9 Wiring)[1]

Figure 54 - Without Pilot Light

Suffix X20





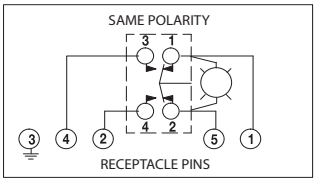
PIN/WIRE CODE
1= White
2= Red
3= Green
4= Orange
5= Black

PRESSURE: CIRCUIT 1–2 (PINS 4 & 2)
OPENS ON RISING PRESSURE
VACUUM: CIRCUIT 3–4 (PINS 1 & 5)
OPENS ON INCREASING VACUUM
(TOWARD 30 in. HG)

Figure 55 - With Pilot Light[2]

Suffix X21X9

WITH LED PILOT LIGHT 120V AC ONLY PILOT LIGHT WIRED ACROSS CIRCUIT 1-2 (PINS 1 & 5)

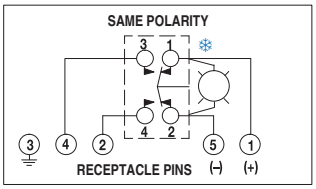


PIN/WIRE CODE
1= White
2= Red
3= Green
4= Orange
5= Black

PRESSURE: CIRCUIT 1-2 (PINS 1&5)
OPENS ON RISING PRESSURE
VACUUM: CIRCUIT 3-4 (PINS 4 & 2)
OPENS ON INCREASING VACUUM
(TOWARD 30 in. HG)

Suffix X21X15

WITH LED PILOT LIGHT 24V DC ONLY PILOT LIGHT WIRED ACROSS CIRCUIT 1-2 (PINS 1 & 5)

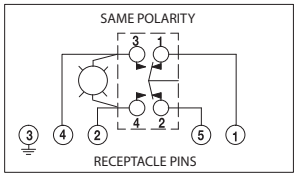


PIN/WIRE CODE
1= White
2= Red
3= Green
4= Orange
5= Black

PRESSURE: CIRCUIT 1-2 (PINS 1 & 5)
OPENS ON RISING PRESSURE
VACUUM: CIRCUIT 3-4 (PINS 4 & 2)
OPENS ON INCREASING VACUUM
(TOWARD 30 in. HG)

Suffix X22X9‡

WITH LED PILOT LIGHT 120V AC ONLY PILOT LIGHT WIRED ACROSS CIRCUIT 3-4 (PINS 4 & 2)

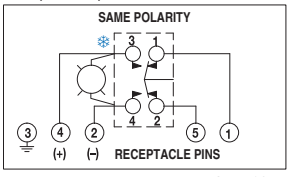


PIN/WIRE CODE
1= White
2= Red
3= Green
4= Orange
5= Black

PRESSURE: CIRCUIT 1-2 (PINS 1 & 5)
OPENS ON RISING PRESSURE
VACUUM: CIRCUIT 3-4 (PINS 4 & 2)
OPENS ON INCREASING VACUUM
(TOWARD 30 in. HG)

Suffix X22X15 ‡

WITH LED PILOT LIGHT 24V DC ONLY PILOT LIGHT WIRED ACROSS CIRCUIT 3–4 (PINS 4 & 2)



PIN/WIRE CODE
1= White
2= Red
3= Green
4= Orange
5= Black

PRESSURE: CIRCUIT 1-2 (PINS 1 & 5)
OPENS ON RISING PRESSURE
VACUUM: CIRCUIT 3-4 (PINS 4 & 2)
OPENS ON INCREASING VACUUM
(TOWARD 30 in. HG)

‡ Note pilot light polarity.
§ X22 not available with 4-circuit pressure controls.

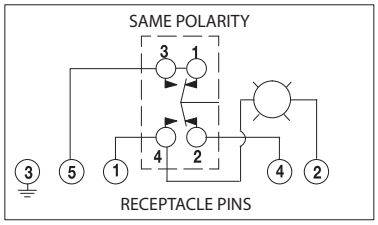
(1) See applicable codes and laws
(2) The pilot lights shown in these diagrams are wired across the terminals and in series with the load. Pilot light is OFF when the load is energized, ON when the load is de-energized. For simultaneous energization of the load and pilot light, or other optional wiring configurations, consult your local Rockwell Automation sales office or Allen-Bradley distributor. You can only select ONE wiring configuration per device.

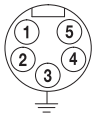
Bulletin 836T 5-Pin Mini-Type Receptacle Option Wiring Reference[1]

Figure 56 - With Pilot Light[2]

Suffix X81X9

WITH LED LIGHT 120V AC ONLY RATED
600V 8 AMPS



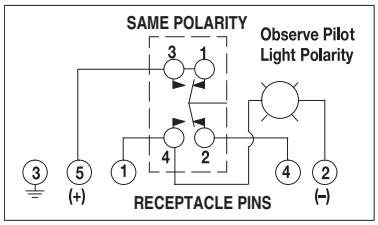


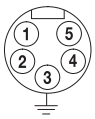
PIN/WIRE CODE
1= White
2= Red
3= Green
4= Orange
5= Black

PRESSURE: CIRCUIT 1–2 (PINS 5 & 4)
OPENS ON RISING PRESSURE
VACUUM: CIRCUIT 3–4 (PINS 5 & 1)
OPENS ON INCREASING VACUUM
(TOWARD 30 in. HG)

Suffix X81X15

WITH LED PILOT LIGHT 24V DC ONLY
RATED 600V 8 AMPS





PIN/WIRE CODE
1= White
2= Red
3= Green
4= Orange
5= Black

PRESSURE: CIRCUIT 1–2 (PINS 5 & 4)
OPENS ON RISING PRESSURE
VACUUM: CIRCUIT 3–4 (PINS 5 & 1)
OPENS ON INCREASING VACUUM
(TOWARD 30 in. HG)

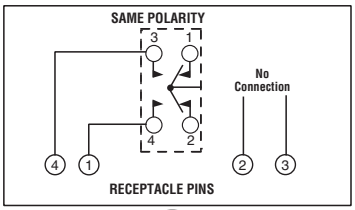
IMPORTANT Bulletin 836T Suffix "X81" Wiring — load and pilot light simultaneously energize when contacts displace (contact terminals 3 and 4 close) at a predetermined pressure setting.

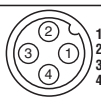
Bulletin 836T 4-Pin Micro-Type Receptacle Option Wiring Reference[1]

Figure 57 - Without Pilot Light

Suffix X136

4-PIN MICRO-TYPE RECEPTACLE VERSION
RATED 250V 4 AMPS





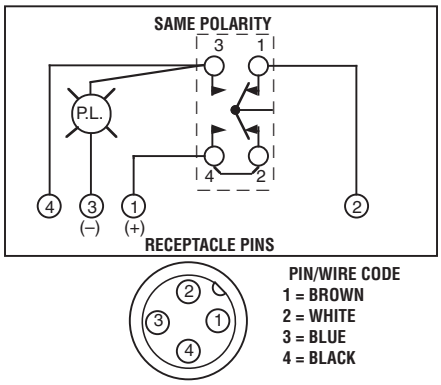
PIN/WIRE CODE
1 = BROWN
2 = WHITE (REMOVED)
3 = BLUE (REMOVED)
4 = BLACK

PRESSURE: CIRCUIT 3-4 (PINS 1 & 4)
CLOSES ON RISING PRESSURE
VACUUM: CIRCUIT 1-2
CLOSES ON INCREASING VACUUM
(TOWARD 30" HG)

(1) See applicable codes and laws.
(2) The X9 pilot light option is a part of the Modified Industrial Controls product offering, see Rockwell Automation publication CMPNTS-BR002 for more information.

Figure 58 - With Pilot Light(1)

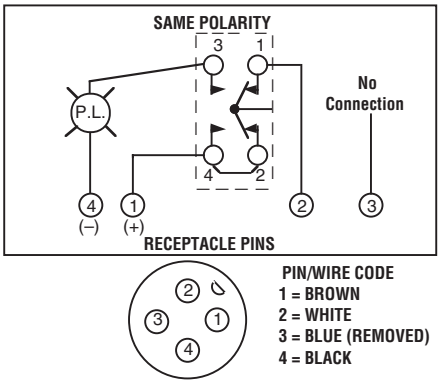
Suffix X130X15
4-PIN MICRO-TYPE RECEPTACLE VERSION
RATED 250V 4 AMPS
WITH LED PILOT LIGHT 24V DC ONLY



PIN/WIRE CODE
1 = BROWN
2 = WHITE
3 = BLUE
4 = BLACK

PRESSURE: CIRCUIT 3-4 (PINS 1 & 4)
CLOSES ON RISING PRESSURE
VACUUM: CIRCUIT 1-2
CLOSES ON INCREASING VACUUM
(TOWARD 30" HG.)

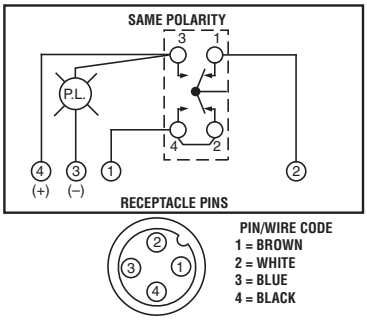
Suffix X135X15
4-PIN MICRO-TYPE RECEPTACLE VERSION
RATED 250V 4 AMPS
WITH LED PILOT LIGHT 24 VDC ONLY



PIN/WIRE CODE
1 = BROWN
2 = WHITE
3 = BLUE (REMOVED)
4 = BLACK

PRESSURE: CIRCUIT 3-4 (PINS 1 & 4)
CLOSES ON RISING PRESSURE
VACUUM: CIRCUIT 1-2
CLOSES ON INCREASING VACUUM
(TOWARD 30" HG.)

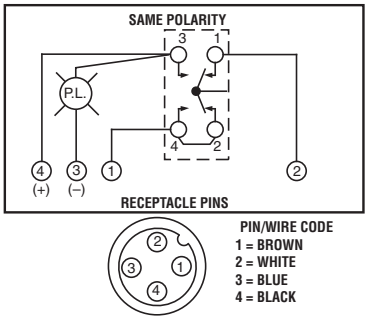
Suffix X137X15, X137X18
4-PIN MICRO-TYPE RECEPTACLE VERSION RATED
250V 4 AMPS
WITH LED PILOT LIGHT 24 VDC ONLY



PIN/WIRE CODE
1 = BROWN
2 = WHITE
3 = BLUE
4 = BLACK

PRESSURE: CIRCUIT 3-4 (PINS 1 & 4)
CLOSES ON RISING PRESSURE
VACUUM: CIRCUIT 1-2
CLOSES ON INCREASING VACUUM
(TOWARD 30" HG.)

Suffix X139X15
4-PIN MICRO-TYPE RECEPTACLE VERSION RATED
250V 4 AMPS
WITH LED PILOT LIGHT 24 VDC ONLY
WITH 10 kΩ RESISTOR, 4-CIRCUIT APPLICATIONS



PIN/WIRE CODE
1 = BROWN
2 = WHITE
3 = BLUE
4 = BLACK

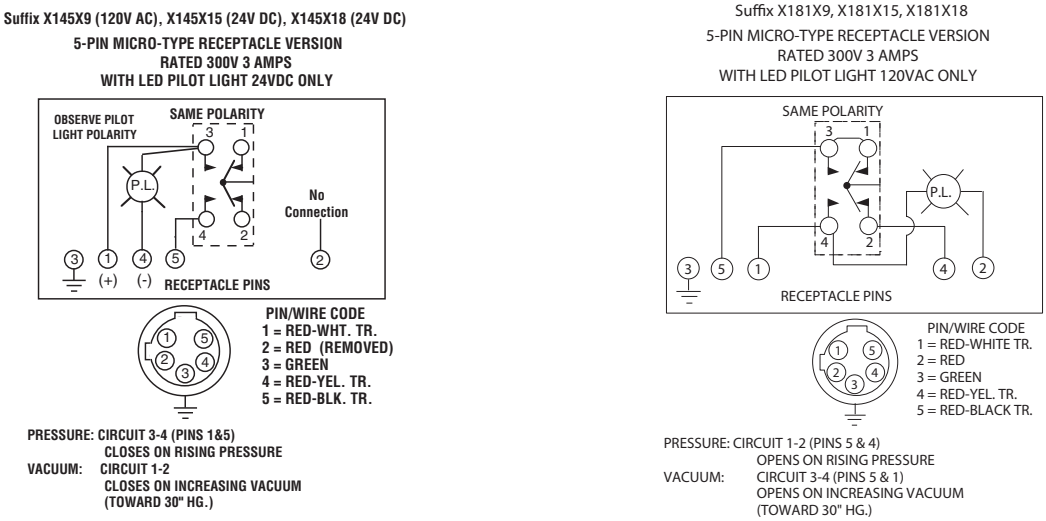
PRESSURE: CIRCUIT 3-4 (PINS 1 & 4)
CLOSES ON RISING PRESSURE
VACUUM: CIRCUIT 1-2
CLOSES ON INCREASING VACUUM
(TOWARD 30" HG.)

‡ Note pilot light polarity.
§ X22 not available with 4-circuit pressure controls.

(1) The pilot lights shown in these diagrams are wired across the terminals and in series with the load. Pilot light is OFF when the load is energized, ON when the load is de-energized. For simultaneous energization of the load and pilot light, or other optional wiring configurations, consult your local Rockwell Automation sales office or Allen-Bradley distributor. You can only select ONE wiring configuration per device.

Bulletin 836T 5-Pin Micro-Type Receptacle Option Wiring Reference[1]

Figure 59 - With Pilot Light[2]



‡ Note pilot light polarity.
§ X22 not available with 4-circuit pressure controls.

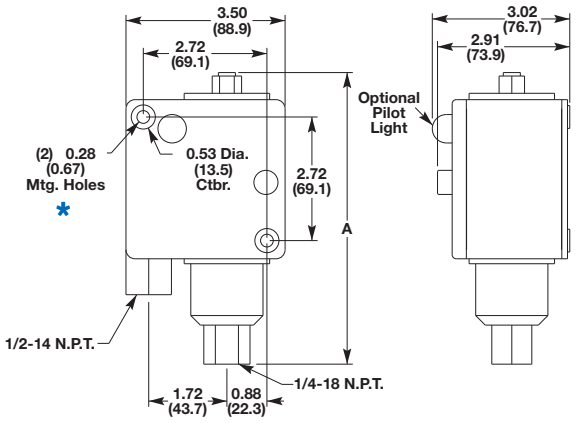
(1) See applicable codes and laws.

(2) The pilot lights shown in these diagrams are wired across the terminals and in series with the load. Pilot light is OFF when the load is energized, ON when the load is de-energized. For simultaneous energization of the load and pilot light, or other optional wiring configurations, consult your local Rockwell Automation sales office or Allen-Bradley distributor. You can only select ONE wiring configuration per device.

Approximate Dimensions and Shipping Weights

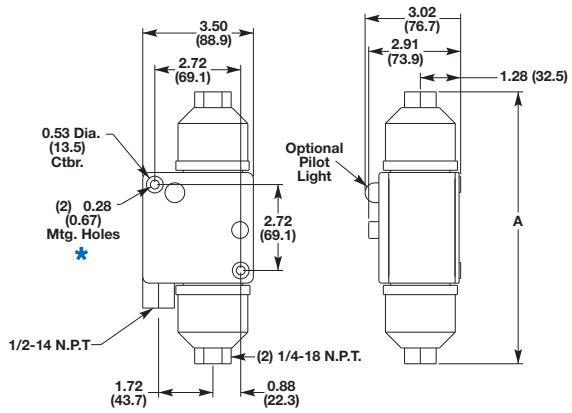
Dimensions in inches (millimeters). Dimensions are not intended to be used for manufacturing purposes.

Figure 60 - Type 4 & 13 (Bellows)



Approximate Shipping Weight 3-1/2 lbs. (1.6 kg)

Figure 61 - Type 4 & 13 Pressure Difference Control Operator

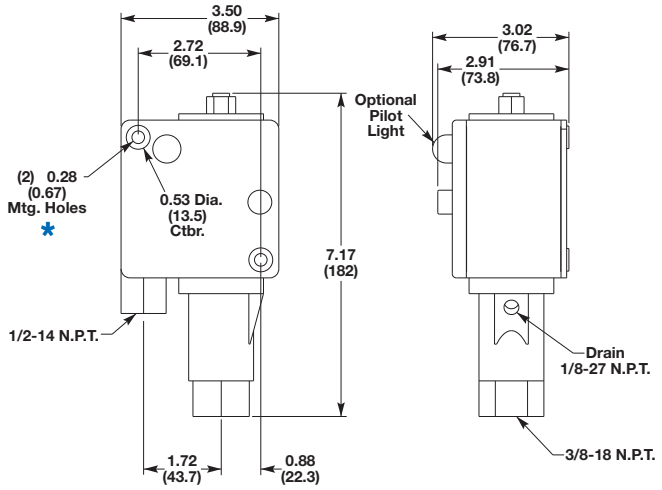


Approximate Shipping Weight 4 lbs. (1.8 kg)

Cat. No.	A Dimension
836T-T251J	6.65 (169)
836T-T260J	
836T-T252J	6.41(163)
836T-T253J	
836T-T261J	
836T-T254J	6.95 (176)
836T-T255J	
836T-T256J	7.09 (180)
836T-T262J	7.33 (186)
836T-T263J	7.25 (184)
836T-D450J	8.60 (218)
836T-D451J	8.14 (207)
836T-D452J	
836T-D453J	9.5 (241)
836T-D460J	8.60 (218)
836T-T252J	8.5 (216)
836T-D463J	10.06 (256)

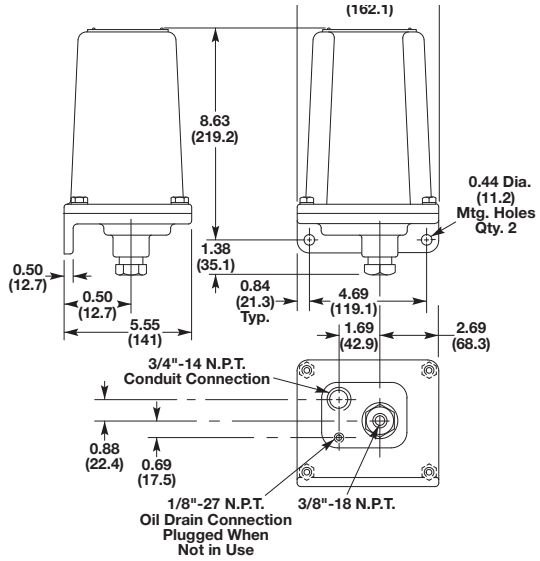
Dimensions in inches (millimeters). Dimensions are not intended to be used for manufacturing purposes.

Figure 62 - Type 4 & 13 (Piston)



Approximate Shipping Weight 4.5 lbs. (2.0 kg)

Figure 63 - Type 4 & 13 and 7 & 9 Bellows and Piston Type(1)



Approximate Shipping Weight 10 lbs. (4.5 kg)

(1) Does not include Dual Bellows Devices

* (2) mounting screws are required: 3/16 x 20 x 2 in. Counter bore depth is 1-1/8 in. Overall depth of mtg hole (front to back) is 2-1/4 in.

Cat. No.	
836T-T300J	836T-T350J
	836T-T351J
836T-T301J	836T-T352J
836T-T302J	836T-T353J
836T-T303J	836T-T400J