

Series DA/DS Bourdon Tube Pressure Switches

Pressure Ranges to 8000 psi (551.6 bar)



[View All Product Images](#)

SHARE

Customers tell us that the **Series DA/DS Bourdon Tube Pressure Switches** are the best pressure switches made. The Mercoid DA/DS Series is one of the world's broadest lines of pressure switches. The DA/DS Series has extremely high sensitivity and great repeatability. The DA Models are equipped with two external adjustments, one for setting high pressure operating point, the other for setting low pressure operating point. Deadband, the difference between high and low setpoints, is adjustable over the full-scale. The DS Models are equipped with a single external adjustment for setting operating point only. For mercury-free switches, choose between the snap action switch or hermetically sealed snap action switch. Hermetically sealed mercury switch also available.

California Residents: [Click Here](#) for Proposition 65 WARNING.

Product Applications

- Compressors
- Mechanical HVAC or process equipment
- Pump control

Ordering | Specifications | Features | Options | Support Library | Approvals | Drawings

Accessories | Videos | Model Chart | Related Products | Photo Downloads | Reviews

Models & Ordering

Sort by Model Number ▾

Filter By

- SPDT Mercury
 - Switch 4A @
 - 120V, 2A @
 - 240V, Adjust.
 - Deadband
- SPST NC Mercury
 - Switch 10A @
 - 120V, 5A @
 - 240V, Adjust.
 - Deadband
- SPST NO Mercury
 - Switch 10A @
 - 120V, 5A @
 - 240V, Adjust.
 - Deadband
- SPDT Snap
 - Switch,
 - Adjust.
 - Deadband
- SPDT Snap
 - Switch, Fixed
 - Deadband

Model	Description
DA-21-153-10S	Pressure switch, 403SS Bourdon tube, range 25-600 psig, 25 psig min. deadband.
DA-21-153-11S	Pressure switch, 403SS Bourdon tube, range 50-1000 psig, 60 psig min. deadband.
DA-21-153-12S	Pressure switch, 403SS Bourdon tube, range 100-1500 psig, 90 psig min. deadband.
DA-21-153-13S	Pressure switch, 403SS Bourdon tube, range 300-2500 psig, 150 psig min. deadband.
DA-21-153-15S	Pressure switch, 403SS Bourdon tube, range 500-5000 psig, 450 psig min. deadband.
DA-21-153-16S	Pressure switch, 403SS Bourdon tube, range 800-8000 psig, 750 psig min. deadband.
DA-21-153-25S	Pressure switch, 403SS Bourdon tube, range 30" Hg Vac-60 psig, 6 psig min. deadband.
DA-21-153-26S	Pressure switch, 403SS Bourdon tube, range 30" Hg Vac-75 psig, 8 psig min. deadband.
DA-21-153-5S	Pressure switch, 403SS Bourdon tube, range 2-60 psig, 4 psig min. deadband.



Series "D" Pressure Controls with Mercury Switches

Specifications - Installation and Operating Instructions

Mercoïd® Series "D" Pressure Controls feature hermetically sealed mercury switches, Bourdon tube power elements, visible setpoint, adjustable deadband or fixed deadband and pressure ranges from 0-30" Hg. Vac to 800-8000 psig (345 bar).

FEATURES

- Visible calibrated dial
- On/off indication
- Adjustable, fixed deadband, or manual reset
- External switch setpoint adjustments
- Minimum deadband is obtainable at any point in the range
- Pressure Ranges of full vacuum to 8000 psig.
- UL listed, CSA approved. Many models FM approved.
- General purpose, weatherproof or explosion-proof enclosures
- Single or two stage operation

SPECIFICATIONS

Wetted Materials: Brass, 403 SS, or 316 SS.

Temperature Limit: 180°F (82°C).

Pressure Limit: Maximum pressure of the operating range.

Enclosure Rating: General purpose, weatherproof or explosion-proof.

Repeatability: ±1% of full operating range.

Switch Type: See circuit chart.

Electrical Rating: See electrical ratings chart.

Electrical Connections: Screw terminal.

Conduit Connection: General purpose: 1/2" hole for conduit hub. Weatherproof: 1/2" conduit hub. Explosion-proof: 3/4" female NPT.

Process Connection: General purpose and weatherproof: 1/4" male NPT, 1/2" male NPT on ranges 15S and 16S. Explosion-proof: 1/2" male NPT and 1/4" female NPT.

Mounting Orientation: Vertical.

Set Point Adjustment: Thumbscrew.

Weight: General Purpose: 4 lb (1.8 kg), weatherproof: 6 lb (2.7kg), explosion-proof: 8 lb (3.5 kg).

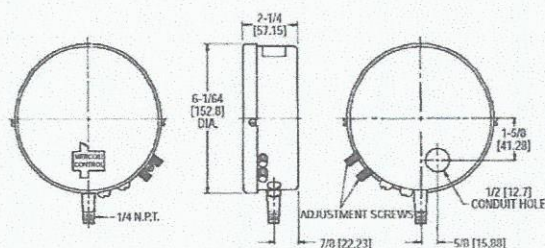
Deadband: See Ranges and Differentials Chart.



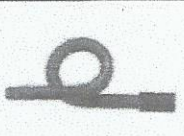
INSTALLATION

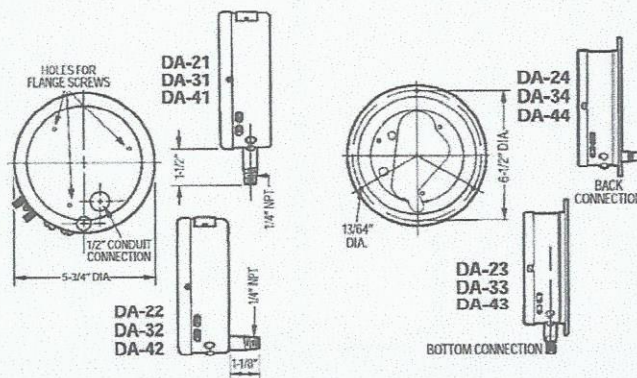
Location and Mounting

Select a location that is recommended by equipment manufacturer and reasonably free from vibration caused by reciprocating or rotating machinery. Where excessive vibration occurs, use a remote connection and mount by means of a mounting bracket or separable flange (available on order). When in doubt about excessive vibration, use a remote connection. Where pulsations, pressure surges, or water hammer are present, protect the control with a surge tank or scrubber. **Mount all controls vertically and level.**

General Purpose Controls: Install controls prefixed by the letters DA, DAF, DRF, DL, DS, DSF, firmly in a level position. Do not mount the control by twisting the case; use a wrench on the square part of the 1/4" bottom pipe connection. To level, sight across the two cover screws or check the lower end of the glass opening in the cover to see that the control is lined up horizontally. On general purpose controls provided with a flange, mount by means of the three holes in the flange.



ACCESSORIES		
		
<p>Remote Connection No. 49-62 (300 psi) No. 49-62HP (to 2500 psi)</p>	<p>Mounting Bracket No. 33-25</p>	<p>Pigtail Siphon No. 42-52 (300 psi) No. 42-58 (2,000 psi)</p>



General Purpose

General Purpose with Flange for Surface Mounting

General Watertight or Weather-Resistant Types: These controls are prefixed by the letters DAW, DRW, DSW and DLW. They are supplied with flanged case, bottom connection only, for surface mounting. Again, install firmly in a **level position**. Do not mount the control by twisting the case; use a wrench on the square part of the 1/4" bottom pipe connection. Be sure pipe connection is in a vertical position. After cover is properly attached, with the name plate on bottom of the cover, sight across the lower end of the glass opening in the cover to see that the control is lined up vertically. Do not use holes in case bottom for mounting

Explosion-Proof Types: Install controls prefixed by the letters DAH, DAHF, DRH, DSH, DAE, DRE, DSE, firmly in a level position by means of mounting lugs attached to the control housing. Line up horizontally by sighting across the left and right conduit hubs.

Notes: Series D-30, D-230, D-430, D-530 (i.e., DA-31-3, etc.), when used for steam with operating ranges of 35 psi or higher, must be siphoned to prevent live steam from entering the Bourdon tube. With high pressure steam in excess of 100 psi, use a remote connection.

Series D-20, D-220, D-420, D-520 (i.e., DA-21-2, etc.), when incorporate an orifice as standard in the bottom stem to dampen out surges or pulsations.

WIRING

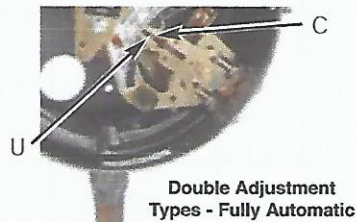
Wire in accordance with local electrical codes or equipment manufacturer's instructions.

For general purpose controls, use a short piece of BX between the rigid conduit and the control so that it will not be subjected to conduit expansion and contraction. Where control is directly connected into load circuit, it should be connected into hot side of line. For electrical rating, see nameplate attached to control case.

ADJUSTMENTS: How to Set Operating Point

Double Adjustment Types - Fully Automatic

Prefixed by DA, DAF, DAW, DAH, DAHF - provided with double adjustments. Adjust the upper pointer "C" to set the HIGH PRESSURE POINT for switch operation. Adjust the lower pointer "U" to set the LOW PRESSURE POINT. The difference between the HIGH and LOW pointers is the operating differential between "on-off" switch operation.



Double Adjustment Types - Fully Automatic

Single Adjustment Types - Fully Automatic

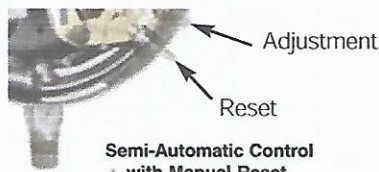
Prefixed by DS, DSE, DSF - equipped with a single adjustment. The single pointer on the scale sets the pressure where switch operation occurs. Differential is fixed (not adjustable). Example setting: Type DS-21-2, range 0-60 psi: circuit opens on pressure rise. If pointer is set at 40 psi, the control will operate to OPEN circuit at 40 psi and RE-CLOSE circuit at the fixed differential of 4 psi.



Single Adjustment Types - Fully Automatic

Semi-Automatic Control with Manual Reset

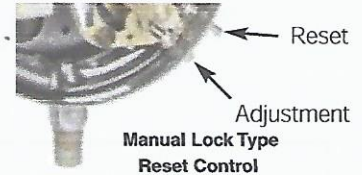
Prefixed by DR, DRF, DRH, DRE, DRW - with suffix -L or -U. Example: Type DR-21-2U. A single adjustment sets the operating point for automatic operation. A push-button reset must be operated manually to restore the circuit to the original position after automatic operation. Example: Type DA-21-2L. Circuit will open automatically on a pressure rise to the pressure indicated by the pointer on the scale. No matter how much the pressure drops, the circuit will not re-close until the reset button has been operated. Suffix -L denotes control will operate automatically on an increase in pressure. Suffix -U denotes control will operate automatically on a decrease in pressure.



Semi-Automatic Control with Manual Reset

Manual Lock Type Reset Control

Operates automatically on a decrease of pressure with provision for manual reset when pressure is below set point. Prefixed by DL, DLW, DLE, DLH. A single adjustment sets the low pressure operating point of the control at any value on the scale range. The control will operate automatically at the set point only on a drop in pressure. The lock-type feature permits the circuit to be reset and locked in position when pressures are below control setting. The lock remains in effect until the pressure has risen to a value above the control setting. Lock then releases and the circuit is held in the reset position due to the pressure rise. It will remain in the reset position until it is called on to again operate automatically on a pressure drop to the selected setting.



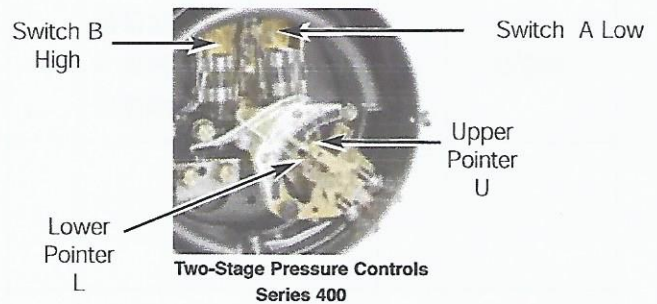
Manual Lock Type Reset Control

Two-Stage Pressure Controls - Series D-400

Types DA, DAW, DAH, DAE - with suffixes 421, 423, 431, 433, etc., followed by specification numbers 4122, 4123, 4129, 4132.

This series incorporates two single pole, single throw magnetic mercury switches, actuated by the same Bourdon tube. The operating point of each switch is adjustable through an outside adjustment.

The change in pressure which opens and closes each switch at its respective setting is the switch's fixed differential. The pressure represented by the difference between the two adjustment pointers is the pressure "spread" between operation of the two switches. Upper pointer "U" indicates the operating point of the HIGH pressure circuit. Lower point "L" indicates the operating point of the low pressure circuit.



Two-Stage Pressure Controls Series 400

Example Setting: Type DA-421, Specification No. 4122, range 0-60 psi. With lower pointer "L" set at 25 psi and upper pointer "U" set at 50 psi, both circuits will be closed when pressure is 25 psi and lower. When pressure rises to 26 psi, mercury switch A will open its circuit. When pressure rises to 50 psi, mercury switch B will open its circuit. Both switches remain open above this setting. The fixed differential (sensitivity) of each switch for this particular range is 1 psi. Upon a drop in pressure, mercury switch "B" will close its circuit at 49 psi; mercury switch "A" will close its circuit at 25 psi.

LOCKING DEVICE

When the control has been adjusted to desired range, the locking bar may be inserted between the adjustment screws with slot passing over the hole in the lug. By placing a sealing wire between the locking bar and the hole in the lug protruding from the adjustment assembly, adjustments cannot be tampered with.

For DAF, DRF, DSF, DAW, DRW, DSW, the adjusting knob cover may be sealed in place with sealing wire through the cover bolt hole. For DAH, DSH, sealing wire may pass through locking bar and hole in hub above the adjusting knobs.

CAUTIONS

Do not exceed maximum adjustment/operating range of control. Remove control if higher pressures are required.

Do not fail to use a siphon on steam where range is 35 lbs. or more. Control movement must not be oiled.

Do not overload — note electrical rating on nameplate and be sure total current passing through switch is within specified rating.

Do not tamper with switch wires. Position of these wires is essential to proper operation. Tampering with these wires will void warranty.