FOR ALL TYPES OF SERVICE

FOR GENERAL PURPOSE

WEATHER-PROOF OUTDOOR SERVICE

EXPLOSION-PROOF HAZARDOUS LOCATIONS

POSITIVE CONTROL of PRESSURE VACUUM TEMPERATURE LIQUID LEVEL

MERCOID® CONTROLS

EQUIPPED WITH SEALED MERCURY CONTACT SWITCHES

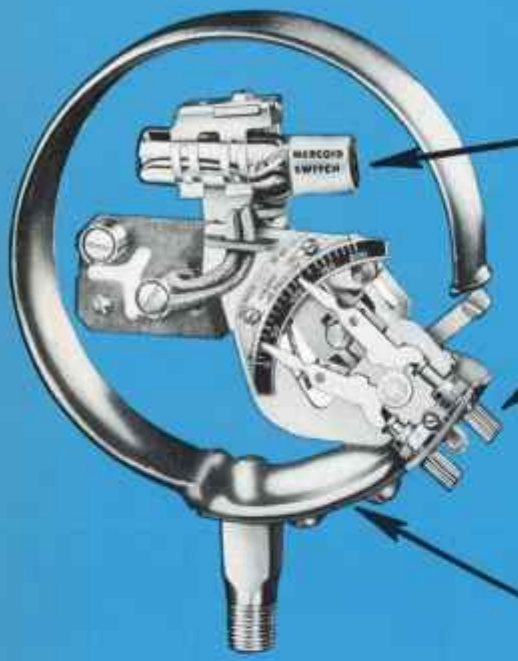
THE MERCOID CORPORATION

MERCOID AUTOMATIC CONTROLS

SERIES "D" PRESSURE AND TEMPERATURE CONTROLS

OVER A MILLION IN USE THROUGHOUT EVERY INDUSTRY IN THE WORLD SAFEGUARDING COSTLY EQUIPMENT AGAINST HAZARDOUS PRESSURE AND TEMPERATURE CONDITIONS.

HERE'S THE REASON WHY THEY ARE SO WIDELY SPECIFIED



SEALED MERCURY CONTACT
Immune to dust, dirt, moisture, corrosion.

OUTSIDE ADJUSTMENT
With visible calibrated dial saves time and eliminates all guesswork.

BOURDON TUBE
It's the actuating element of the control. The oldest known, tried and proven element.

FOR GENERAL PURPOSE
(Nema 1)
Series DA, DS, DR, DL

FOR OUTDOOR SERVICE
(Nema 1A, 2, 3, 4)
Series DAW, DSW, DRW, DLW

FOR HAZARDOUS LOCATIONS
(Class 1, Group D.)
(Class 2, Group E, F, G.)
Series DAE, DSE, DLE, DRE

Pressure and Vacuum Applications

Mercoid Series "D" Pressure Controls

Bourdon Tube Power Element—Fully Adjustable as to Range and Sensitivity—External Adjustments—Visible Calibrated Dial Sealed Mercury Contact.

Available in ranges varying from 0-30" vacuum to 300-2500 psi, with the "sensitivity" your application requires. Sensitivity varies according to the type of control and its electrical rating. For example, chart below indicates the different sensitivities available for some of the many ranges.

ELECTRICAL RATING A.C.	ADJUSTABLE RANGE	MAXIMUM DIFFERENTIAL	MINIMUM DIFFERENTIAL
10A. 115V.	0-14 psi.	14 psi.	1 psi.
5A. 115V.	0-14 psi.	14 psi.	½ psi.
20Watts 115V.	0-14 psi.		2 ounces
10A. 115V.	0-1000 psi.	1000 psi.	75 psi.
20Watts 115V.	0-1000 psi.		10 psi.

Series "D" Pressure Controls are available as follows:

DOUBLE ADJUSTMENT TYPE "DA"—for setting both the cut-in and cut-out operating points. Available with multiple circuit arrangement.

SINGLE ADJUSTMENT TYPE "DS"—for use on applications requiring very close operating differentials. Has single adjustment for setting range only. The minimum "sensitivity" is set at the factory and cannot be changed in the field.

SEMI-AUTOMATIC OPERATION With Hand Reset "DR"—equipped with single adjustment which sets operating point to either open or close circuit automatically upon pressure decrease. Manual reset push button restores switch to normal operating position.

LOCK TYPE RESET CONTROL "DL"—A low pressure safety control with provisions for locking circuit in running position for starting. Lock releases on pressure rise.

Series "D" controls are furnished standard with plain case, bottom connection. Available with plain case back connection, flanged case bottom connection and flanged case back connection.

Series "D" Weather Resistant Controls

All above types are available with weather resistant construction suitable for outdoor service and other applications to meet NEMA specifications 1A, 2, 3, 4.

Two-Stage Pressure Controls

Mercoid DA-400 Series: A single Bourdon tube actuates two independently adjustable Mercoid magnet operated mercury switches. The switches may be used for multiple circuit control for various operations. Ranges are available from 0-30" vacuum to 2500 psi. Equipped with outside double adjustments for setting pressures at which each switch operates. Has accurately calibrated visible dial. Also available for outdoor service or in explosion-proof housing.

Differential Pressure Controls

Bourdon Tube Operated

Series BB: Two Bourdon tubes, each responsive to a pressure condition, to operate a Mercoid sealed mercury contact switch as the "difference" in pressure conditions between them widens or narrows. Available in ranges from 75 psi (Sensitivity 3 psi) to 300-2500 psi (Sensitivity 50 psi).

Diaphragm Seals for Series D Pressure Controls

For use with Mercoid Series D Pressure Controls, where it is desired to control the pressure of heavy viscous materials or highly corrosive acids and alkalies which would be impracticable for direct control by the Bourdon tube of Mercoid Controls.

Explosion-Proof Housings

All Series D Pressure Controls are available in explosion-proof housings for hazardous locations.

MERCOID CONTROLS MAY BE EQUIPPED WITH MORE THAN ONE MERCURY SWITCH OF THE SA

Pressure and Vacuum Applications

Diaphragm Operated Pressure Controls For Air or Gases—Inches or Hundredths of Inches of Water

Series PQ: For very sensitive control of low pressure or vacuum in terms of inches or fraction of inches of water. Have many applications in the industrial field for regulation of liquids from slight changes in head pressure; as signal safety devices in event of excessively high or low pressures; as regulating gas pressure by controlling gas boosters.

Available in ranges from 0.-0.1" pressure, to 1.0-30.0" vacuum, with a sensitivity varying from 0.01", to 0.1-0.2". There is a special circuit arrangement for your application. (Write for bulletin 25S). All types available with **weather-proof** construction (outdoor service) or with **explosion-proof** housings (hazardous locations.)

Diaphragm Differential Pressure Controls Two Pressure Chambers—Single Diaphragm

For Use with Air or Gas (Inches or Hundredths of Inches of Water)

Series PPQ: Open or close an electrical circuit according to a minute change in the difference between two pressures or vacuums. These controls offer a wide range of applications where switch operation is required from the difference between two pressures across a filter, valve, etc., as the case may be. Range 6.0" vacuum to 6.0" pressure (sensitivity 0.03" or .08"). Range 30.0" vacuum to 30.0" pressure (sensitivity 0.1" to 0.2" or .4").

All types available with **weather-proof** construction (outdoor service) or with **explosion-proof** housings (hazardous locations.)

Temperature Applications

Mercoid Series "D" Remote Stem Temperature Controls

Bourdon Tube Power Element (Vapor-Pressure Operated) Fully Adjustable as to Range and Sensitivity—Visible Calibrated Dial—External Adjustments—Sealed Mercoid Mercury Contact

Mercoid Series "D" Remote Stem Temperature Controls are available in ranges varying from minus 30° to plus 60° to 370-530°F. in the "sensitivity" your application requires. Sensitivity varies according to the type of control and its electrical rating. For example, chart below indicates the different sensitivities available for two of the many ranges.

ELECTRICAL RATING A.C.	ADJUSTABLE RANGE	DIFFERENTIAL OBTAINABLE WHEN SET AT		
		HI	MED	LO
10A. 115V.	0- 75°F.	1½°	4°	8°
	370-530°F.	4°	8°	14°
20Watts 115V.	0- 75°F.	0.6°	1°	1½°
	370-530°F	1°	1½°	3°

Series "D" Remote Stem Temperature Controls are available as follows:
DOUBLE ADJUSTMENT TYPE "DA"—for setting both the cut-in and cut-out operating points. Available with multiple circuit arrangement.
SINGLE ADJUSTMENT TYPE "DS"—for use on applications requiring very close operating differentials. Has single adjustment for setting range only. The minimum "sensitivity" is set at the factory and cannot be changed in the field.
SEMI-AUTOMATIC OPERATION WITH HAND RESET "DR"—equipped with single adjustment which sets operating point to either open or close circuit automatically upon temperature decrease. Manual reset push button restores switch to normal operating position.
LOCK TYPE RESET CONTROL "DL"—A low temperature safety control with provisions for locking circuit in running position for starting. Lock releases on temperature rise.
Series "D" controls are furnished standard with plain case, bottom connection. Available with plain case back connection, flanged case bottom connection or flanged case back connection.

Series "D" Weather Resistant Controls

All above types are available with weather resistant construction suitable for outdoor service and other applications to meet NEMA specifications 1A, 2, 3, 4.

Explosion-Proof Housings

Available for hazardous locations for all above types.

Air Temperature Controls Bimetal Operated—Ranges to 650° F.

For use as a Limit, Fan or Alarm Control on Air Conditioning Ducts, Dryers, Ovens

Series M-51: A dial located in the center of the instrument slowly rotates as the temperature on the bimetal coil increases or decreases. A simple double adjustment is provided for setting the cut-in and cut-out operating temperatures. Available in various circuit arrangements. Ranges from 40-280°F. to 50-650°F.

Series 116: For Air Conditioning Ducts, Industrial Bake Ovens or Drying Ovens. For close temperature control. Has outside adjustment lever for easy setting of operating range. Ranges available 50-300°F. (Diff. 4°F.) 250-500°F. (Diff. 3°F.) 50-500°F. (Diff. 5°F.). Can be furnished to either open circuit or close circuit on temperature rise.

Series 118: For very close differentials. Also has outside adjustment. Differential for following ranges 50-150°F., 100-250°F. and 225-235°F. is only 1°F.

Line Voltage Thermostats

No. 855 Series for automatic room temperature control where it is desired to handle the full motor load connected directly to the line voltage without the use of the relay.

Ranges 38-70°F., 56-80°F. and 65-90°F. Heating types close circuit on temperature fall; cooling types close circuit on temperature rise. Approx. differential all types 2°F.

Elec. Cap.: A.C. or D.C. 10 Amp.-115V., 5 Amp.-230V.

Available with manual "on-off" switch for use with unit heaters.

Explosion-Proof Thermostats

Series 855EH: Listed as standard by Underwriters' Lab. Inc. (Class 1, Group D, or Class 2, Group F and G). For room air temperature control in hazardous locations. The Mercoid mercury contact and all electrically live parts are housed in the explosion-proof chamber. Mechanical mechanism for actuating mercury contact is mounted on the front, therefore making it sensitive to temperature changes. Elec. Cap. same as No. 855 above. Ten different ranges to meet your particular need.

MERCOID® MERCURY SWITCH EQUIPPED CONTROLS

LEVER ARM AND FLOAT CONTROLS

Lever Arm Controls are adaptable to a variety of applications whereby a mechanical movement attached to the lever arm opens or closes a mercury switch.
Float Controls maintain fluid levels in tanks or for control of sump pumps. Have many industrial applications.

For hazardous locations. These explosion-proof lever arm controls can be furnished in any number of circuit arrangements to meet many applications. Compact and light in weight.

LIQUID LEVEL CONTROLS

Various types are available suitable for gasoline, oil, ammonia or other low specific gravity liquids. Circuit opens or closes on approx. 1" change in fluid level. Available in various circuit arrangements. There are also other types available such as combination pressure and low water controls, low water control only or boiler feed pump control.

Explosion-proof liquid level controls for pressures to 300 lbs. Circuit opens or closes on approx. 1" change in liquid level. Adaptable for water or other high specific gravity liquids not corrosive to copper or brass—for gasoline or light oils—for ammonia or other liquids not corrosive to cast iron or stainless steel. Also available with packless construction.

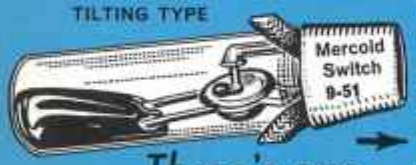
RELAYS—REPULSION TYPE

Series V2 and V3: Mercury contact repulsion type relay with low voltage circuit. Transformer is self-contained in relay. Primary coil induces a 24 volt in the secondary coil by transformer action. No springs or clappers are used. Quiet in operation. No welding of contacts. Available in many circuit arrangements for 115 or 230 volts, 25, 50 or 60 cycle operation.

Relay for audible alarm. Type V2x108 push button relay permits operator to manually interrupt an audible alarm and provide for alarm circuit to be automatically re-established as soon as the condition requiring alarm has been corrected. Available for 115, 230 or 440 volts A.C. current or similar D.C. voltages.

MERCOID SEALED MERCURY SWITCHES

TILTING TYPE



There's one for your application


9-61


9-62


9-63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9-67


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Our Engineering Department will gladly assist in solving your problem.

To insure your own product of long lasting performance specify Mercoid—the contact that is made by the leading manufacturer of sealed mercury contacts, backed by over thirty years of engineering skill, intensive research and quality materials. These switches are immune to dust, dirt, lint, grease, moisture and corrosion.

Tilting Types: Mercury to mercury contact. A simple tilting movement opens or closes the circuit. See table for available models.

Magnetic Types: Switch remains in a stationary position and is operated by magnetic attraction through the glass. They are actuated by small permanent magnets (or small milli ampere electromagnets). See table for available models.

MAGNET TYPE

MERCOID TILTING TYPE SWITCH SPECIFICATIONS

Ratings are conservative, therefore switches have ample capacity for higher starting loads and will operate within the limits specified.

FIGURE NUMBER	GENERAL RATING AMPERES			MOTOR RATING HORSEPOWER			APPROX. LENGTH OVERALL IN INCHES	APPROX. DIAMETER IN INCHES
	A.C. or D.C. 115 V.	A.C. or D.C. 230 V.	A.C. 440 V.	REPULSION INDUCTION	DIRECT CURRENT	SPLIT PHASE		
9-51	10	5	3	1	½	½	2 23/32	43/64
9-55	25	12½	6	2	1	1	3 7/32	57/64
9-61 , 62 , 63 , 64	4	2	1	¼	⅛	⅛	2 1/32	33/64
9-65	1	½	..	1/20	1/20	1/30	1 11/32	⅜
9-66 , 67 , 69	4	2	1	¼	⅛	⅛	2½	33/64

HEAVY DUTY TILTING SWITCHES FOR NON-INDUCTIVE A.C. HEATER LOADS ONLY

Note: The following ratings do not apply on motor or lamp bank loads, or on any D.C. application.

FIGURE NUMBER	RATING IN AMPERES MAXIMUM		RATING IN WATTS NON-INDUCTIVE - A.C. ONLY		APPROX. LENGTH OVERALL INCHES	APPROX. DIAMETER IN INCHES
	115 V.	230 V.	115 V.	230 V.		
9-51H	20	20	2000	4000	2 13/32	44/64
9-61H	9	4½	1000	1000	2 1/32	33/64
9-55	25	25	2875	5000	3 7/32	57/64

MERCOID MAGNETIC SWITCH SPECIFICATIONS

FIGURE NUMBER	NORMAL POSITION OF SWITCH	AMPERE RATING						MOTOR RATING—HORSEPOWER			APPROX. LENGTH OVERALL IN INCHES	APPROX. DIAMETER IN INCHES
		24 VOLT		115 VOLT		230 VOLT		REPULSION INDUCTION	SPLIT PHASE	DIRECT CURRENT		
		A.C.	D.C.	A.C.	D.C.	A.C.	D.C.					
9-81R	Open	0.9	0.45	0.3	0.15	0.15	0.07	1/60	1/60	—	2	33/64
9-83	Closed	0.9	0.45	0.3	0.15	0.15	0.07	1/60	1/60	—	2	33/64
3-11	Open			1	0.5	0.5	0.25	1/20	1/30	—	2	33/64
3-13	Closed			1	0.5	0.5	0.25	1/20	1/30	—	2	33/64
3-91	Open			5	2.5	2	1	¼	⅛	1/10	2½	43/64
3-93	Closed			5	2.5	2	1	¼	⅛	1/10	2½	43/64

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