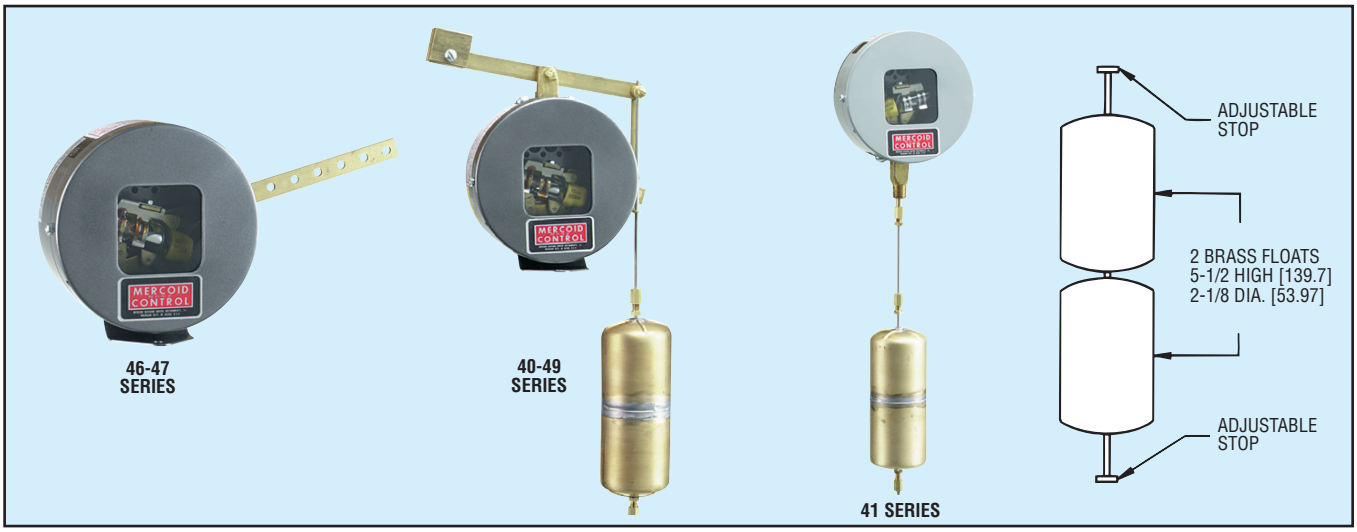
Mercoid®

Series
40-41
46-47
49

Lever Arm and Float Controls



LEVER OPERATED CONTROLS

To Open/Close Circuits by Mechanical Movement Snap-Action Type 46 (General Purpose NEMA-1)

Used where positive mercury switch action is desired when the operating lever is moved to a particular position (see Chart C for various circuits available). The mercury switch does not move until the operating arm has moved a definite amount at which time it "snaps" to its alternate position.

Direct-Action Type 47 (General Purpose NEMA-1)

Used where greater sensitivity and more over-travel is desired. The mercury switch is mounted on the lever and moves with it. Requires less force and travel than the snap-action type. See Chart C for switch operations.

Direct Action with Spring Return-Type 47SR

For same application as Type 47 except this control is equipped with the spring return feature. The mercury switch is mounted on the lever arm with a spring assembly which returns the arm to the "Center" position when force is removed from the lever arm.

Standard Features

General Purpose-Types 46, 47, 47SR: 4-3/4″ dia. steel case finished gray enamel. Glass fronted cover. Outlet box has 1/2″ knockouts on both sides. Standard with bottom mounting base plate having two 13/64″ holes 3″ apart. $4\frac{1}{2}$″ lever arm extended to right with seven lever holes 1/2″ Centers.

FLOAT CONTROLS
For vessels not under pressure

Type 40-49

For use with rods and floats to open/close mercury switches by a change of liquid levels in vessels not under pressure. Example: to start and stop motor operated pumps, or perform other functions in changes of liquid level.

Type 40 Counter Balanced Snap-Action Movement

For general applications. The float assembly slides up and down the float rod. When the float rises to the top stop, it moves the operating arm up, and when it drops to the bottom stop, it moves the operating arm down. The mercury switch does not move until the operating arm has moved a definite amount, at which time it "snaps" to its alternate position. For minimum liquid level changes, see Chart C. Enclosure is NEMA-1 general purpose.

Type 49 Counter Balanced Direct Action

For use where closer differential in level change is desired between on and off operation. The mercury switch is mounted directly on the operating lever and moves with it. This control requires less operating force than the snap-action type. For minimum liquid level changes, see Chart C. Enclosure is NEMA-1 general purpose.

Type 49SRC Counter Balanced Direct-Action with Spring Return
Similar to Type 49 except spring return assembly added to provide for stage operation. The spring return assembly holds the arm in a neutral position (contacts either open or closed) until the float engages upper or lower stop on rod, and actuates control contacts. Can be used for high or low alarm. Enclosure is NEMA-1 general purpose.

Standard Features

General Purpose-Types 40, 49, 49SRC: 4-3/4″ dia. steel case finished gray enamel. Glass fronted cover. Outlet box has 1/2″ knockouts on both sides. Standard with bottom mounting base plate having two 13/64″ holes 3″ apart. Standard Construction: Furnished with bottom mounting and with lever arm extended to right.

Type 41 Plunger Type Snap-Action

For use on closed tanks (cannot be used on pressurized tanks). Rod and floats same as Type 40 except maximum rod length 4 ft. For minimum liquid level change, see Chart C. Standard Construction: Furnished with 1/4″ NPT Bottom Connection only. Enclosure is NEMA-1 general purpose. For Weather Resistant NEMA-3 Case, specify Type 41W. When ordering, specify Type No. and Circuit. Example: Type 41 - 156. Can be used for pump operation or day tanks.

MODEL CHART – SERIES 40-49 LEVER ARM OPERATED FLOAT CONTROLS

40	**2**	**R6**			
40	2 R6		Series Designator. Counter balance lever arm operated control with adjustable deadband. Minimum deadband approximately 2″ (51 mm), maximum deadband 20 ft. (6 M). Operates with **Two** 2-1/8″×5-1/2″ (54×140 mm) diameter brass floats with rod length up to 8 ft; or **Three** 2-1/2″×5 1/2″ (54×140 mm) brass floats for 8 to 20 ft (2.44 to 6M) rod. Float, (Float type, size and rod length must be specified on order). Has mercury switch with “snap action” movement assembly. General purpose case only. Mercury switch circuit. See Chart C. Indicates lever is to the right, and has bottom flange for mounting. **Float and Rod assemblies must be ordered separately. See Chart A. For minimum deadband see Chart B.**	UL	CSA
49	**4821**	**R6**			
49	48xx R6		Similar to Type 40 Series, except mercury switch is mounted directly on operating arm providing closer minimum deadband of 7/8″ (22 mm). Mercury switch circuit. See Chart C. Indicates lever is to the right and has bottom flange for mounting. **Float and Rod assemblies must be ordered separately. See Chart A. For minimum deadband see Chart B.**		CSA
49SRC	**4849**	**R6**			
49SRC	48xx R6		Similar to Type 49 except has spring return to hold lever arm in center (internal) position until the float engages upper or lower stop actuating mercury switch. Circuit 4849 suitable for high and low alarm. Mercury switch circuit. See Chart C. Indicates lever is to the right and has bottom flange for mounting. Other circuits available. Consult factory. **Float and Rod assemblies must be ordered separately. See Chart A. For minimum deadband see Chart B.**		CSA

MODEL CHART – SERIES 41 PLUNGER TYPE FLOAT CONTROLS

41		2	Plunger type liquid level control with mercury switch and “snap action” movement assembly. For use with closed, ventilated tanks (cannot be used with pressurized tanks). Maximum rod length 4 ft. (1.22 M). Operates with **One** 4 1/2″ (114 mm) copper or stainless steel float or **Two** 2 1/8″×5 1/2″ (54×140 mm) cylinder floats. (For liquids less than 0.90 specific gravity use three cylindrical floats). Furnished with 1/4″ NPT bottom connection.	UL	CSA
	W	2	Mercury switch circuit. See Chart C. Weather resistant NEMA - 3 case. **Float and Rod assemblies must be ordered separately. See Chart A. For minimum deadband see Chart B.**		

CHART A – FLOATS AND RODS FOR SERIES 40, 41 AND 49

37 - 29	Consists of 4 ft. (1.22 M) stainless steel float rod, two 2 1/8″×5 1/2″ (54×140 mm) cylindrical brass floats, and brass stops.
37 - 43	Consists of 4 ft. (1.22 M) stainless steel float rod, 4 1/2″ (114 mm) diameter 304SS float and stainless steel stops.
37 - 49	Consists of 4 ft. (1.22 M) stainless steel float rod, 4 1/2″ (114 mm) diametercopper float and brass stops.
	Other rod lengths available. Consult factory.

CHART B – MINIMUM LIQUID LEVEL CHANGES (WATER)

TYPE NO.	MAX. ROD LENGTH	TWO 2-1/8″ (54MM) O.D. BRASS FLOATS	ONE 4-1/2″ (114 MM) O.D. COPPER OR SS FLOAT
40	20 Ft. (6 M)	2″ (51 mm)	1 1/2″ (38 mm)
41	4 Ft. (1.22 M)	4″ (102 mm)	1 1/2″ (38 mm)
49	20 Ft. (6 M)	7/8″ (22 mm)	1/2″ (13 mm)
49SRC	20 Ft. (6 M)	1 1/2″ (38 mm)	3/4″ (19 mm)

MODEL CHART – SERIES 46-47 LEVER ARM OPERATED CONTROLS

46	**2**	**R6**			
46	2 R6		Series Designator. Lever arm operated control. Deadband approximately 2″ (51 mm). Has mercury switch with “snap action” movement assembly. General purpose case only. Mercury switch circuit. See Chart C. Indicates lever is to the right, and has bottom flange for mounting.	UL	CSA
47	**4821**	**R6**			
47	48xx R6		Similar to Type 46 Series, except mercury switch is mounted directly on operating arm providing closer minimum deadband of 7/8″ (22 mm). Mercury switch circuit. See Chart C. Indicates lever is to the right and has bottom flange for mounting.	UL	CSA
47SRC	**4821**	**R6**			
47SRC	48xx R6		Similar to Type 47 except has spring return to hold lever arm in center (internal) position until the lever actuates engages upper or lower stop actuating mercury switch. Mercury switch circuit. See Chart C. Indicates lever is to the right and has bottom flange for mounting. Other circuits available. Consult factory.	UL	CSA

CHART C

SWITCH ACTION			SNAP-ACTION TYPES 40, 41 OR 46	DIRECT-ACTION TYPES 47, 49, 47, 49SRC		
LEVER DOWN	CENTER	LEVER UP	ADD SUFFIX	ADD SUFFIX		
“A” OFF		ON	-2	-4821	UL	CSA
“A” ON		OFF	-3	-4820	UL	CSA
“A” ON “B” ON		OFF OFF	-103	-4814	UL	CSA
“A” OFF “B” OFF		ON ON	-127	-4813	UL	CSA
“A” OFF “B” ON		ON OFF	-156	-4815	UL	CSA
“A” OFF “B” ON	ON ON	ON OFF		-4823	UL	CSA
“A” OFF “B” ON	OFF OFF	ON OFF		-4849	UL	CSA
“A” OFF “B” ON	ON OFF	ON OFF		-4805	UL	CSA

Other Switches or Combination of Switches are Available, consult factory.

ELECTRICAL RATING — ALL TYPES

Standard type 9-51 switch. Each switch AC or DC 10A. 120V., 5A, 240V., Motor Rating 120/240V 3/4 hp. single phase AC 1/3 hp. DC.

ORDERING INFORMATION:

EXAMPLE: How to order (see model chart)

40 2 R6
1 2 3

1 Series Designation
2 Circuit
3 Float Arm and Flange Location

EXAMPLE: How to order (see model chart)

41 2
1 2

1 Series Designator
2 Circuit

EXAMPLE: How to order (see model chart)

49 4821 R6
1 2 3

1 Series Designator
2 Circuit
3 Float Arm and Flange Location

EXAMPLE: How to order (see model chart)

46 2 R6
1 2 3

1 Series Designator
2 Circuit
3 Lever and Flange Location

EXAMPLE: How to order (see model chart)

49 SRC 4820 R6
1 2 3 4

1 Series Designator
2 Spring Return
3 Circuit
4 Float Arm and Flange Location

EXAMPLE: How to order (see model chart)

47 4821 R6
1 2 3

1 Series Designator
2 Circuit
3 Lever and Flange Location