

## ADAPTABLE COLD CONTROL\* SPDT/SPST

\*A22-1129 DIRECT REPLACEMENT FOR ICE MACHINES

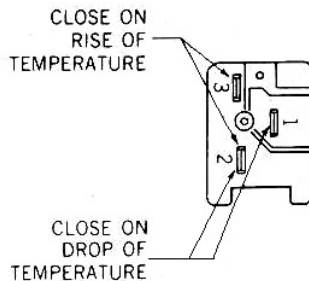
### APPLICATION

The function of the A22 control is to cycle a SPST or SPDT switch in response to changes of temperature. The temperature sensing element consists of an appropriate charge bellows assembly for accurate temperature control. The A22 control is used for the following applications:

- Beverage Coolers
- Water Coolers
- Room Air Conditioning
- Ice Harvest Control
- Ice Bin Level Control
- Heat Pumps ( Manual Changeover
- Two Speed Condenser Fan Control
- Signal or Alarm Circuits
- Defrost Cycles (Wide Differentials)

ELECTRICAL RATINGS				
VAC	FLA	LRA	NIA	P.D., VA
120	20	80	25	500
240	20	80	25	500
277	16	60	18	500

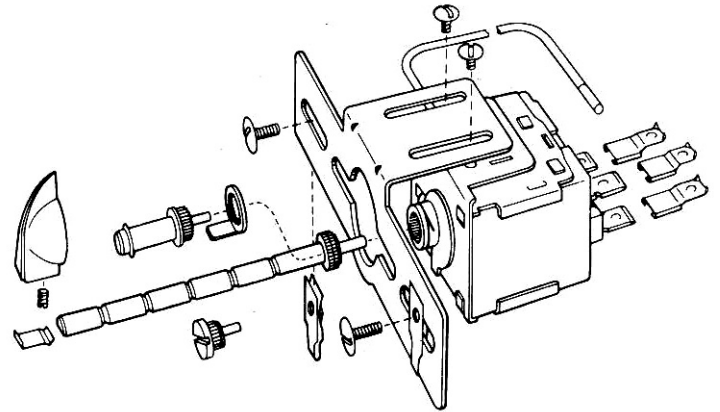
Switch is operated by the expansion and contraction of the bellows in response to temperature changes. Switch terminals #2 and #1 CLOSE on DROP, and terminals #2 and #3 CLOSE on RISE Terminal #2 is common. (See Figure 1)



**SWITCH TERMINAL WIRING**  
Figure 1

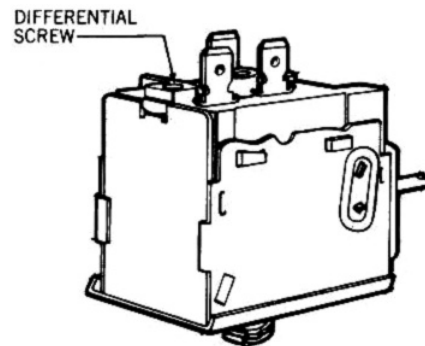
If single throw action is used, the A22 control will have one terminal (#2 or #3) omitted, depending on the functional application the A22 control is to be applied.

**NOTE:** Should a loss in bellows charge occur, terminals # 2 and # 1 will close. At operating temperatures the bellows pressure exceeds atmospheric pressure thereby contracting the bellows upon loss of fill to open the circuit to terminals # 2 and # 3.



**RANGE ADJUSTMENTS** are limited to the rotation of the dial for the required temperature set point needed by the user. However, limited altitude corrections can be made on initial installation by using the range screw under the end cover.

**DIFFERENTIAL SCREW ADJUSTMENT**, in the insulator block, is for factory calibration use only, and is NOT to be adjusted in the field



**ADJUSTMENT SCREWS**  
Figure 2

**TEMPERATURE SENSING ELEMENTS** are of two types. (1) LIMITED VAPOR - PRESSURE fill to operate from the coldest point (2) CROSS AMBIENT fill to operate from the bulb location only. It is important that capillary and bulbs not be cut, kinked or pinched in mounting to unit elements. Also, ensure tubing clamps and wells are of compatible material with the control sensing element to prevent corrosion.

**VAPOR - PRESSURE** filled capillaries can be formed to various bulb types to match the original control being replaced. Use RANCO bulb forming tool. Catalog number 57963-1 for your bulb forming requirements.

**CROSS AMBIENT** bulb's dimension will be 3/8" O.D. x 4" size bulbs with the word "TOP" stamped on the bulb. The bulb must be mounted with word "TOP" up when in horizontal position. Bulbs with 1/4" O.D. x 6 3/8" must be mounted with "fill" tube straight up or to within 65 of vertical.

## MOUNTING INSTRUCTIONS

A22 controls supplied are of two types, direct or adaptable replacements. The direct replacement controls are supplied with original mounting brackets and dial shaft configuration for immediate installation the same as original. All other A22 types are supplied with adaptable hardware.

1. Disconnect electrical power.
2. Locate and remove inoperative control.
3. If using an A22 direct replacement, mount control and capillary the same as original.
4. For the adaptable control select required shaft, driver and mounting bracket from parts package supplied with replacement control
5. Place mounting bracket on control and adjust horizontal mounting bracket by moving bracket forward or backward until mounting dimension height is comparable to original control. Tighten two bracket mounting screws.



**HORIZONTAL BRACKET**  
Figure 3

6. Space two Tinnerman nuts on mounting bracket to correspond with original mounting holes spacing. It may be necessary to shorten the mounting bracket due to interference. This can be easily done by bending and breaking at one of the serrations to give desired length.

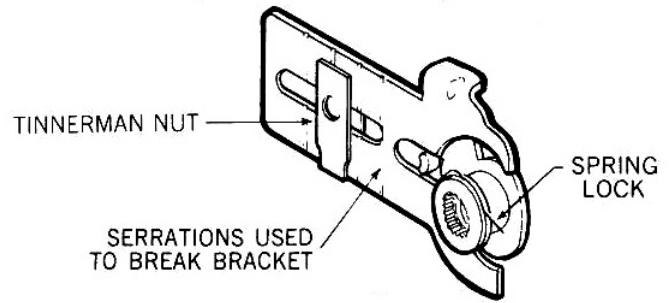


Figure 4

7. Insert selected shaft into female shaft connection until shaft spring lock clip snaps into place to retain the adaptable shaft. When using a single prong driver with a snap-ring shaft, place the prong driver on first, then the shaft. If the 2" break-off shaft is used, ensure that the shaft is at desired length prior to inserting into control. Mounting bracket may have to readjust for desired shaft stickout.
8. Rotate shaft counterclockwise to OFF position on both original and replacement controls.
9. Remove shaft if necessary and reposition the shaft to match the original by simultaneously pressing spring lock counterclockwise and lifting shaft and reinsert shaft into replacement control to match original.
10. Complete electrical connections (see switch wiring). Mount control and install capillary and bulb.
11. Attach knob to dial shaft. Turn knob to desired temperature setting.
12. Turn electrical power on and check operation of control. Allow sufficient time for the unit to reach operating temperature.

## CONTROL SPECIFICATIONS

PART NO.	SWITCH ACTION	TEMPERATURE (°F)						BULB CAPILLARY	APPLICATION
		COLD		NORMAL		WARM			
		OUT	IN	OUT	IN	OUT	IN		
* A22-391	SPDT	11		30	38		53	66" Straight	Refrigeration
A22-392	SPDT	14		31.5	55		65.5	48" Straight	Refrigeration
* A22-1112	SPST	25	30				44	72" Straight	Refrigeration
A22-1113	SPST	60	65				91	48" Straight	Air Conditioner
A22-1114	SPST	60	65				91	54" + $\frac{3}{8}$ " x 6 $\frac{1}{2}$ "	Air Conditioner
A22-1115	SPST	60	65				91	84" + $\frac{3}{8}$ " x 6 $\frac{1}{2}$ "	Air Conditioner
* A22-1129	SPDT	29		36	42		48	48" Straight	Ice Machine
A22-2451	SPDT	39		60	65.5		83	27" Straight	Air Conditioner
A22-2453	SPDT	59	64				92	39" + $\frac{3}{8}$ " x 4"	Air Conditioner
A22-4506	SPDT	-19		0	8		22	72" Straight	Ice Machine

\*Direct Replacement. All Others Are Adaptable.



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