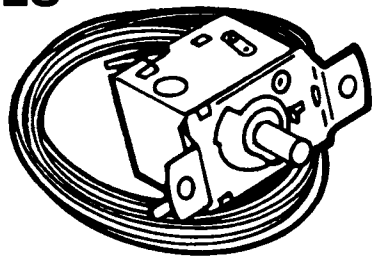
RANCO

# INSTRUCTION SHEET

Bulletin No. 1531064-A

# A10/A22/A30 SERIES DIRECT REPLACEMENT CONTROLS



## DESCRIPTION/APPLICATION

RANCO A10 control is used in applications where FLA requirements **DO NOT** exceed 16 amp @ 120/240 VAC. Switch is SPST.

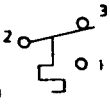
RANCO A30 control is used in applications where FLA requirements **DO NOT** exceed 20 amps @ 120/240 VAC. Switch is SPST.

RANCO A22 control general is built with a SPDT switch and can be used to control air conditioning cooling and heating circuits. The A22 carries the following ratings:

Cooling **FLA 20 amps @ 120/240 VAC**
Heating **NIA 25 amps @ 120/240VAC**

A10/A30 Single pole, single throw (SPST)
close (cut-in) on rise
open (cut-out) on drop

A22 Single pole, double throw (SPDT)
2-3 close on rise; open on drop
2-1 close on drop; open on rise




The A22 may be built as a SPST switch with either terminal 1 or 3 omitted.

**CAUTION**

**To prevent possible electrical shock or equipment damage, disconnect electrical power to unit before and during installation. DO NOT restore electrical power to unit until the control is properly installed and grounded. DO NOT locate the control in an explosive atmosphere as a safety hazard can result due to possible spark generation in the control.**

Controls are not to be located in areas of splashing water or extreme moisture, dirt or dust, or in a corrosive or explosive atmosphere. These environments can shorten control life.

## PREINSTALLATION STEPS

1. Disconnect electrical power.
2. Refer to the equipment manufacturer's service manual.
3. Note position and routing of the control's sensing element.
4. Record the electrical wire to terminal connections.
5. If the sensing element enters a pressurized fitting or well, cautiously relieve the pressure and remove the fluid prior to removal of the control.
6. Remove control, retaining the screws and any hardware required for the replacement.

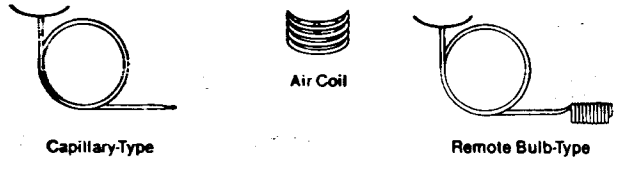
## INSTALLATION OF NEW CONTROL

1. Taking care to not twist the control body secure it to the original mounting.

## SENSING ELEMENTS

There are several forms of sensing elements used on the A series, but there are only two basic types: limited vapor-fill and cross ambient.

**LIMITED VAPOR-FILL TYPE**

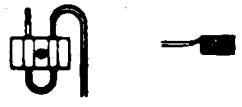



1. Limited vapor-fill sensing elements always sense from the coldest section including the control body if it becomes coldest.
2. When sensing an evaporator or similar surface, make certain that the bulb or at least 6" of capillary is in good contact with it. **DO NOT** crush or deform the sensing element when clamping it. Sensing may be improved by insulating the sensing section and area from the environment.

OVER

**INSTALLATION cont'd**

3. When sensing a well, the bulb or at least 10" of capillary should be in good contact with the inner wall. Sealant should be used to prevent water from entering or condensing in the well.
4. When sensing a liquid, the entire bulb or at least 4" of capillary should be immersed.
5. When sensing air, at least 18" of capillary or the bulb with an additional 8" of capillary should be in the air stream.
6. When the capillary sensing section is pointed upward, an "S" bend or "U" must be provided.



**A22 CROSS AMBIENT BULB**

Cross ambient bulbs always sense from the bulb. The positioning of the bulb is important as shown below.

If bulb has word **"TOP"** stamped on it, then position as shown in Fig. A

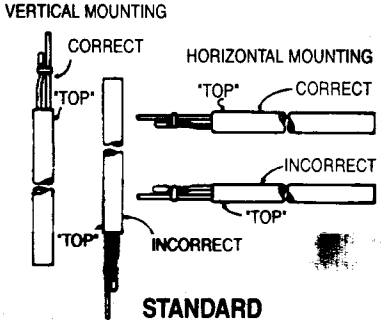



**Fig. A**

The bulb shown in Fig. B is intended to be used for vertical mounting only. With the top of the bulb no more than 65° from vertical.

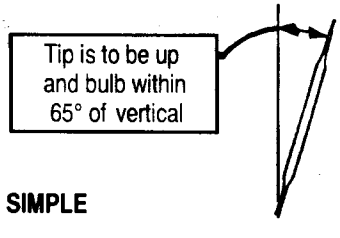



**Fig. B**

Bulb position prevents the condensed fill from flowing away from the sensing section and causing erratic operation.

**CAPILLARY CARE AND MOUNTING**

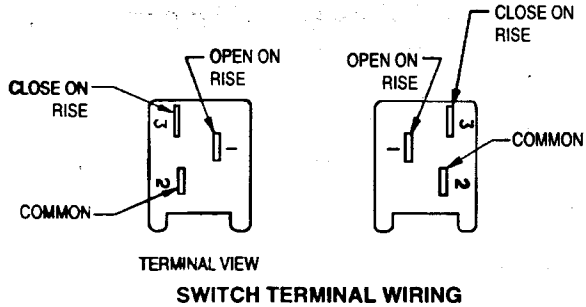
1. Hold the capillary close to the bellows and carefully uncoil the required amount. Minimize rebending of the capillary which makes it more susceptible to breakage.
2. **DO NOT** cut the capillary or bulb. Avoid sharp bends, kinks, strains, or pinch marks in the capillary. Never allow the capillary to rest against sharp edges or rub against metal surfaces.
3. Avoid exposing the capillary to extreme temperatures such as suction and discharge lines.
4. A drip loop should be provided in the capillary to prevent moisture from reaching the control and causing an electrical short.
5. Excess capillary does not affect the setting or operation. Secure any excess capillary in 3 inch coils to avoid damage from vibration and contact with electrical terminals. Silicone adhesive applied between the coils will prevent rubbing.
6. If the sensing element has a compression fitting, hand start the fitting. Using a suitable wrench, secure the fitting. **DO NOT** overtighten.

**CONTROL WIRING**

1. Disconnect electrical power to the unit.
2. **DO NOT** exceed the electrical ratings listed below.
3. The control's terminals must not be bent, cut off or modified.
4. Allow some slack in the wire to prevent stressing of the switch. Provide a drip loop in the wiring to prevent water from reaching the control.
5. Secure wires to prevent damage from discharge lines, fan blades, sharp edges, compressor movement, vibrations, etc.

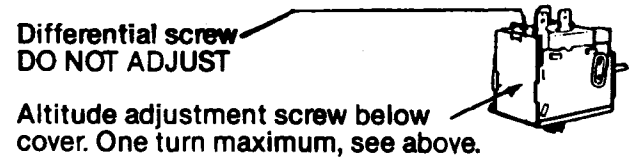
**NOTICE: A22 SWITCH TERMINALS**

**Check terminal layout before wiring switch.**




**SWITCH TERMINAL WIRING**

**ALTITUDE CORRECTION**




Turning the screw clockwise corrects for altitude at the approximate rate of 1/8 turn per 1000 feet. **DO NOT** exceed 1 full turn. Replace cover.



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