

V. Calibration Set-up

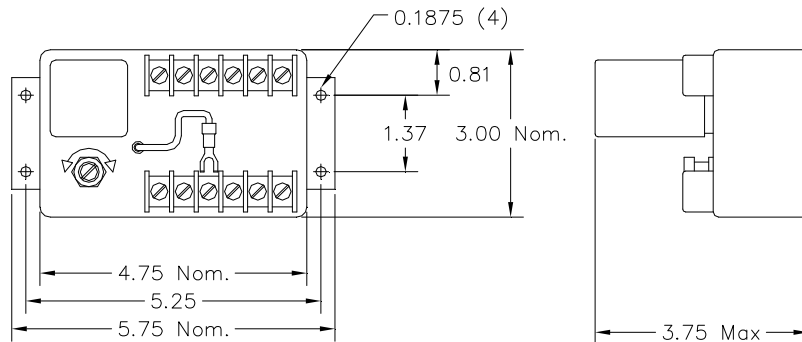
To adjust set point potentiometer to desired value, proceed as follows:

- A. Remove power from unit. If connected, remove transducer wiring.
- B. Connect an accurate decade resistance box to the transducer terminals 7 and 8 or 8 and 9 according to the schematic selected.
- C. Add a jumper from terminal 8 to 10 to simulate schematic selected.
- D. Refer to the transducer curve and set decade resistance to the value desired as the "trip" point.
- E. Apply 115VAC power to the unit.
- F. Adjust set-point potentiometer on the unit until the desired relay or switch action is achieved.
- G. Lock set-point potentiometer at this setting.

NOTE

For two lead transducers, if the transducer is already installed in its location, lead wire resistance compensation can be accomplished by connecting the decade resistance box in series with one transducer lead, leaving the other lead connected, and shorting the two transducer leads at the transducer location. In this manner, the leads are included in the circuit calibration.

It should not be overlooked that for two lead transducers, the ambient temperature will have some effect on the resistance of the leads but only to the extent of .004 ohms/ohm/degree C for copper lead wire.



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RESISTANCE SENSING POWER RELAY MODELS 70B-20 THRU 70B-31 INSTALLATION AND OPERATION

I. General Description

The **Resistance Sensing Relay**, Model 70B series, measure the resistance of an external transducer. If the resistance is above or below a predetermined set-point, a relay or solid state switch is operated. The 70B series is available in a wide variety of models to accommodate various types of transducers and resistance ranges. The relay or switch can be configured to operate when the transducer resistance is either above or below a set value. (The 70B-31 operates below the set point only.)

II. Power Requirements

The unit requires 115VAC nominal, 50/60Hz, single phase, less than 10VA.

III. Installation, Mechanical

The unit is supplied with a metal case suitable for flange mounting as shown in the diagram on the back page. The unit is not position-sensitive and may be mounted in any orientation.

IV. Installation, Electrical

A. Transducer Inputs

The unit will accommodate many different types of transducers, such as resistance temperature detectors, thermistors, pressure to resistance, position to resistance transducers, etc. These transducers are of two or three lead configurations. Three lead transducers are generally used for low resistance to reduce lead wire resistance as a factor in the transducer circuit. High resistance transducers generally have two leads since the transducer resistance is many times the lead resistance and operation is therefore not seriously affected by the leads.

B. Outputs

The unit is supplied with either of the following outputs:

1. Plug-in dust-tight relay having two form-C contacts (DPDT) rated 115VAC, 10 amperes resistive, 1/4HP 115/230VAC
2. Single pole, single throw solid state switch. The solid state switch is available for either 115VAC or 230VAC load voltage for 5, 10, or 15 amperes resistive load. The 5 ampere unit plugs directly into the octal socket. The 10 and 15 ampere units are on a separate heatsink package with cable and connections for plugging into the octal socket.

C. Mode of Operation

A jumper wire emerging from the left center of the case is used to select the mode of operation. The connection of the jumper determines whether the relay or switch operates above or below the set-point.

D. Schematics and Hook-up

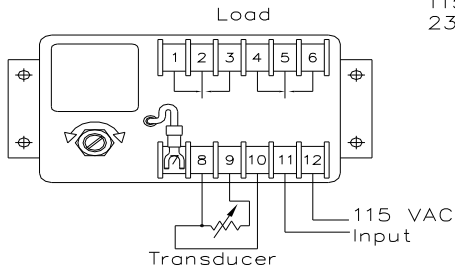
1. Eight connection drawings follow. Determine the operation desired by asking the following questions:

- Is a two or three lead transducer used?
- Is the relay or switch energized above or below the set-point?

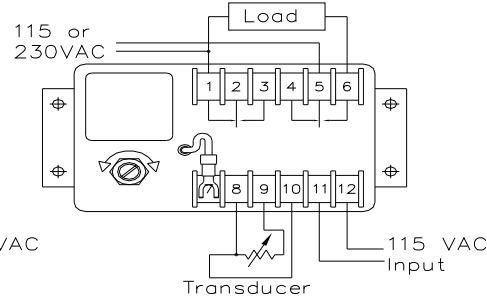
2. Three Lead Transducer

a. Relay or switch operated when resistance is below set-point (drops out above set-point).

RELAY



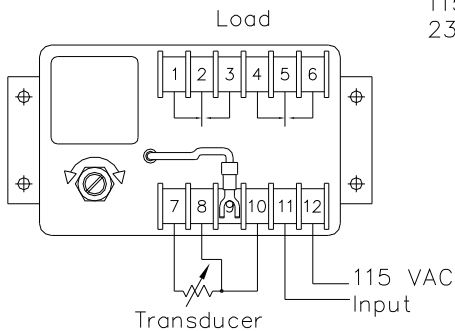
SOLID-STATE SWITCH



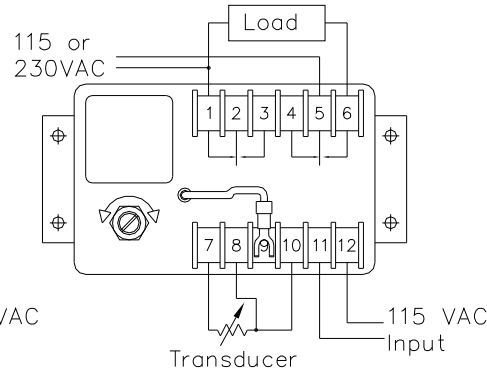
b. Relay or switch operates when resistance is above set-point (drops out below set-point).

(Do not use with 70B-31)

RELAY



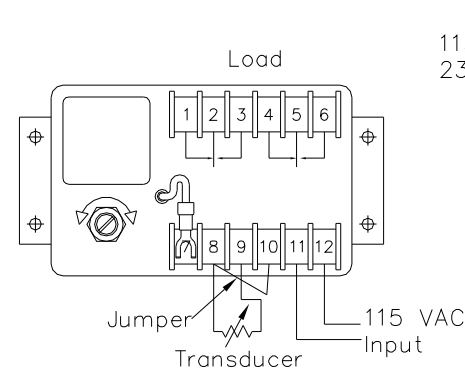
SOLID-STATE SWITCH



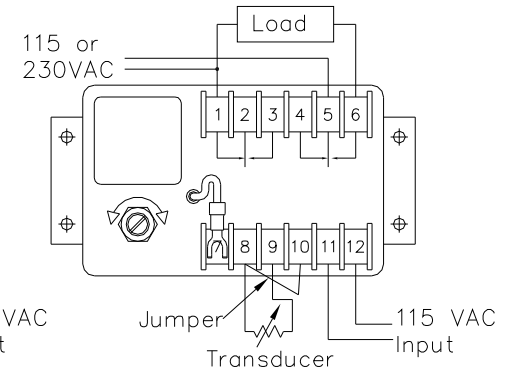
3. Two Lead Transducer

a. Relay or switch operated when resistance is below set-point (drops out above set-point).

RELAY



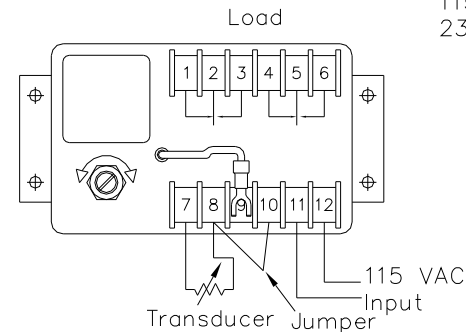
SOLID-STATE SWITCH



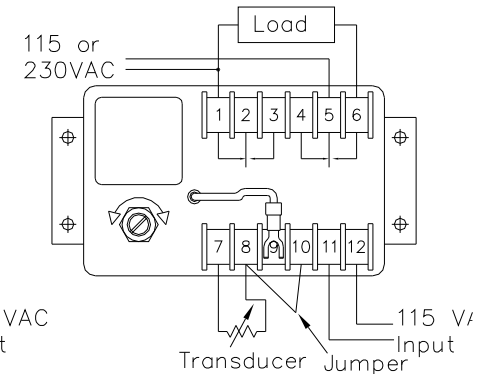
b. Relay or switch operates when resistance is above set-point (drops out below set-point).

(Do not use with 70B-31)

RELAY



SOLID-STATE SWITCH



4. When the proper connection drawing is found:

- Connect transducer to terminals 7, 8, 9, or 10 as shown. In the case of two-lead transducers, add jumper wire as shown. (22AWG or larger)
- Connect red jumper wire to either terminal 7 or 9 as shown.
- Connect load to terminals 1-6 as required.
- Connect power (115VAC, 50/60 Hz) to terminals 11 and 12.
- Calibrate set-point potentiometer as in section V.