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Installation of AC Current actuated switches for DC control circuits

This AC current actuated switch (CAS) uses an open collector darlington transistor as the switch element. Base bias for the transistor is derived from the current being measured and no external power is required.

The transistor is rated to switch up to 100 milliamps, and will withstand 50 volts in the off state. It is internally protected against reverse voltage, but it will not operate in that mode.

Sensitivity is specified for a single turn of the sensed wire through the hole in the sensor. If more sensitivity is needed multiple turns can be used. The best performance will be obtained if the turns are wound around the "square" end of the sensor as shown in the figure. When a single wire is used it should be constrained toward the square end as with a spot tie to prevent small changes in the trip setting if the wire moves in the hole.

Adjustment can be performed on the bench using a 9 volt dry battery, a load such as a small lamp, and a source of test current equal to the desired switching level. Set the control fully counterclockwise, then apply the test current and turn the control clockwise until the switch operates. A load resistor and an oscilloscope will allow accurate setting through observation of the 120 Hz ripple which is present near the switching point.

This is one of the highest sensitivity switches we manufacture and is ideal for providing input to logic circuitry as to current above a certain level for control purposes. If a resistor is substituted in the diagram for the lamp then voltage appears across the resistor when the current level is reached, or across the darlington before. So output across the resistor will give a N.C. contact, and output across the darlington a N.O.

Preferred location of sensed wire

