IC3650SPUA

Calibration Using the Portable Calibration Box

Please use customer calibration settings if provided.

GENERAL OPERATNG PROCEDURE

The portable calibration box is intended for calibrating the Overload, Overload/Over temperature, Unbalance and Ground Fault functions of a Lodtrak motor protection relay. A circuit card containing electronic components is installed in the box and should remain there permanently. On no account should any of the sealed trim potentiometers of this card be adjusted. Space is provided for a relay driver card and a function card, to be provided by the Lodtrak relay under test. Cards are withdrawn from the relay and also from the calibration box using the card puller provided. IT IS IMPORTANT THAT POWER BE REMOVED FROM THE RELAY BEFORE CARDS ARE REMOVED. A SWITCH MARKED "CARD POWER" IS PROVIDED ON THE CALIBRATION BOX. THIS SWITCH SHOULD ALWAYS BE IN THE OFF POSITION WHEN CARDS ARE EITHER BEING INSERTED OR WITHDRAWN.

Prior to using the calibration box it should be connected to a standard 115V 60 Hz supply, the main power switch turned on and the equipment allowed to warm up for approximately 10 minutes.

Operation of the equipment for calibrating individual card functions is described in the following pages. After individual card calibration all cards should be replaced in the CORRECT relay base, care being taken to ensure that they are properly seated. A functional test should be done on the complete relay as follows.

Push the test button of each function card in turn and check that the trip and alarm relays pick up and that all latching relays latch after the button has been released. Check also that the appropriate annunciator lamps light and that the trip lamps latch. (Note there is some delay in operation of the test function of the unbalance card, the trip signal produced by other cards should be immediate.)

THIS PROCEDURE IS FOR CALIBRATION ONLY!!!

PHASE UNBALANCE CARD (IC3650SPUA)

1. Set controls as follows:

   "UNBALANCE" switch – "UNBAL"
   "UNBALANCE" potentiometer – CCW
   "CURRENT INPUT" – Both CCW
   "OVERLOAD/ OVER TEMPERATURE" – "F. L. AMPS"
   "FUNCTION" – "UNBALANCE"

   Remove jumper T3 – T4 (lower left corner of card – with pins pointing down) from the unbalance card, set "TRIP LEVEL" adjustment on card to desired trip level (scale is marked 10%, 20%, and 30%, pot is infinitely adjustable within this range). Note that CW rotation is toward 30% and CCW is toward 10%. Now insert both unbalance and relay driver cards in their appropriate slots and apply sufficient force to ensure good contact in their sockets. Rotate both trim pots fully CW (approximately 15 turns). Turn card power switch to "ON".

2. Adjust "CURRENT INPUT" controls until digital meter displays the desired full load current. Check that "UNBALANCE" potentiometer is indeed fully CCW then rotate CW until digital meter displays the reduced value of current equivalent to the unbalance level required for ultimate trip of the relay. (e. g. if full load current = 5 amps, and unbalance to trip = 10%, then meter should read 90% of 5 amps = 4.5 amps)

Now rotate the trim pot (R85) on unbalance card (the trim pot on the left) CCW till trip lamp lights. Turn CW until lamp goes out then slowly CCW again until lamp just lights. Note that if the "UNBALANCE" potentiometer is now locked off fully CCW then slowly CW again, the alarm lamp will light first at 7% of the trip value if the alarm function is included then the trip lamp will light at the level of unbalance just calibrated. Now turn the "UNBALANCE" potentiometer fully CCW.

3. Turn "UNBALANCE" switch to "1.5 x F. L. " then adjust "CURRENT INPUT" controls until digital meter reads a value 1.5 times the full load current. Rotate clamp trim pot (R82, the trim pot on the right) slowly CCW until the reading on the digital meter just starts to reduce. Meter will be inclined to "bounce" some. Look for a steady decrease R82 is turned and then come back to where it just begins.

4. Turn card power switch to "OFF". Remove cards and replace T3 and T4 jumper on balance card.

END OF CALIBRATION