IC3650SODB1

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 Cards are withdrawn from the relay and also from the calibration box using the card puller provided.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 THIS SWITCH SHOULD ALWAYS BE IN THE OFF POSITION WHEN CARDS ARE EITHER BEING INSERTED OR WITHDRAWN.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!!!

Overload Car (IC3650SODB1)

1. Set controls as follows
   "UNBALANCED" switch – "F. L. Amps"
   "UNBALANCED" potentiometer – CCW
   "CURRENT INPUT" – Both CCW
   "OVERLOAD OVER TEMPERATURE" – "F. L. AMPS"
   "FUNCTION" – "OVERLOAD"

   Turn "TRIP LEVEL" adjustment on card to 100%. Clip orange jumper lead to C-13 lead nearest to card front (first scrape off transparent varnish to ensure good contact). Now insert both overload and relay driver cards in their appropriate slots, using sufficient force to ensure good contact in the sockets. Insert jumper lead plug into the socket marked "JUMPER". Turn both trim pots of overload card, R36 and R37, fully CCW (about 15 turns). Turn card power switch to "ON".

2. Adjust "CURRENT INPUT" controls until digital meter displays the desired ultimate trip current (Between 2.0, 3.0 and 5.0 amps). Turn "OVERLOAD/OVER TEMPERATURE" switch to "ADJUST F. L. " then push "FAST CAL" button on card and hold while turning "RUN" trim potentiometer clockwise. When a trip is indicated, back off R37 CCW until relay released then very slowly turn CW again until relay just trips. (Further rotation than is necessary to just cause the relay to trip will result in the relay being set at too low a value).

3. Turn the "OVERLOAD/OVER TEMPERATURE" switch to "L. R. AMPS" and adjust "CURRENT INPUT" control until digital meter displays the desired locked rotor current. (Between 12, 18, and 30 amps if locked rotor current is six times full load current). Turn "OVERLOAD/ OVER

TEMPERATURE" switch to "ADJUST L. R. " then adjust "STALL" trim pot CW until the digital display reads the value given by table 1, below, for the desired maximum stall time. (This operation will approximately set the desired stall time).

TABLE 1

TIME (sec.)	METER READING	TIME (sec.)	METER READING	TIME (sec.)	METER READING
5	226	10	116	20	062
5.5	206	11	106	21	058
6	190	12	098	22	056
6.5	176	13	090	23	054
7	164	14	084	24	052
7.5	152	15	080	25	050
8	144	16	074	26	048
8.5	136	17	070	28	046
9	128	18	068	30	042
9.5	122	19	064		

4. Turn "OVERLOAD/OVER TEMPERATURE" switch to "TIME". Press and hold down the yellow "TIME" button. Card will now experience a simulated locked rotor and after trip will display the time taken to trip. Releasing the button resets the circuit and , after a wait of ten seconds, the button may be depressed again to repeat the test. If the time taken to trip is too long turn R36 CW a little and repeat the test. If the time is too short turn R36 CCW. Repeat until the time to trip is within acceptable limits.

5. Turn card power switch to "OFF". Remove cards and jumper from Overload card.

6. Check wires test jacks to pins.

END OF CALIBRATION